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Monthly Message

A letter received recently by a United States Senator from one of the New England states related the following incident While in Japan a lady awoke one morning with a severe pain in one arm and was unable to move it Ascertaining that there was a large American hospital in the city she and her husband went there at 9 00 a m to seek advice and help They were given an appointment at 3 00 p m On returning to the hospital at the appointed hour she was informed that the doctor refused to see her as she didn't belong to the armed services. She came out crying as the pains got worse and was dimbfounded by this treatment. She finally was able to obtain treatment from a Swiss physician. Some remarks we heard from other Japanese people were Is this the American Democracy you are trying to teach the world?

One scarcely needs to ask the question. What is wrong with this picture? All who profess to be doctors should constantly bear in mind an axiom well expressed by the late Dr. Ferdinand Sauerbruch in 1929. To be a physician is to be a servant of the sick." Furthermore it is the duty of the physician to do more than he has to and to give of hirself generously Finally all doctors in the Armed Forces must remember that they not only represent the medical and dental professions but they are also officers of the Armed Forces of the United States and as such have the opportunity and duty each day to serve as represent atives of this country and dependent on their own actions and way of life good will will accrue both among their fellows in arms and fellow Americans and also among the people of the countries in which they are stationed.

FrankBBING

FRANK B BERRY M D
Assistant Secretary of Defense
(Health and Medical)

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Foreword

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FRANK B BERRY M D
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MAJOR GENERAL GEORGE E ARMSTRONG
S g G al U i d Si i A my
REAR ADMIRAL LAMONT PUGH

S g G al U i d Si i Navy

MAJOR GENERAL DAN COGLE

United States Armed Forces Medical Journal

Volume VI

January 1955

Number 1

THE INTERMEDIATE CORONARY SYNDROME

ASHTON GRAYBIEL Captain (MC) USN

PERSONS with disease of the coronary arteries are subject to "attacks" which may be looked upon as complications of this underlying pathologic state. There is general agreement regarding the use of the terms angina pectoris and myocardial infarction in describing two types of attacks, but these terms do not include all attacks Attempts have been made to fill this gap by describing "severe" forms of the anginal syndrome 2 and mild types of infarction 3 -4 Another approach has been to describe additional types of attacks which are essentially dis tinct syndromes In an important article, Blumgart and his as sociates' proposed the term "coronary failure' to designate episodes in which patients suffered cardiac pain more prolonged than that consistent with angina pectoris yet in whom there was neither clinical evidence of myocardial infarction nor was it found at post mortem They pointed out that these attacks some times coincided with factors known to increase the work of the heart or decrease its blood supply but if they occurred under circumstances previously known to provoke pain the clinical diagnosis of "coronary failure due to acute coronary occlusion" is justifiable In 1948, Freedburg and associates amplified the original description and extended the concept to include pa tients who exhibited slight systemic responses to the injury and whose electrocardiograms showed slight transitory changes of the RS-T segment and the T wave

Shortly after Blumgart and associates original article appeared Master and co-workers' introduced a new classification of coronary heart disease emphasizing the differentiation between angina pectoris acute coronary occlusion and acute coronary insufficiency. They redefined acute coronary occlusion as complete obstruction of a coronary artery with massive confluent myocardial infarction. Acute coronary insufficiency fell between

From U.S. N. val. School of Aviation. M. d. cine. Naval. Air. Statu. n., Pen. acola. Fla. P. ented before th. Section on Military V. dictine of the Amer. can. Medical. A sociation a. th. annual. m. eting of the Amer. can. M. d. cal. As oc. ation. m. San. Francisco., 24 June. 1954.

angina pectoris and coronary occlusion and they stated that the clinical picture may simulate coronary occlusion or there may be no symptoms at all but the electrocardiogram and the pathological changes are specific. It was pointed out in further reports that a wide variety of etiological factors acted as pre disposing or precipitating agents

Our experience in dealing with patients suffering from coronary heart disease has also emphasized the need for additional cate gories which would aid the clinician in the handling of these From a practical standpoint such categorization must be canable of sharp definition and should be based on clear cut clinical indicators and not on obscure pathophysiologic mech anisms In our opinion it is relatively easy and very much worth while to distinguish a type of acute attack due to coronary heart disease which is intermediate in severity between angina pec toris and myocardial infarction In the brief account which fol lows, chief emphasis will be placed on the differential diag nosis from the clinical point of view

The intermediate coronary syndrome is defined as an acute attack complicating coronary heart disease in which evaluation of the pain distinguishes it from the anginal syndrome and evaluation of the other clinical findings distinguishes it from myocardial infarction We prefer the term intermediate coronary syndrome to coronary failure both because it suggests the re lationship to angina and infarction and because its meaning is univocal However our clinical observations agree so well with those reported by Blumgart and his associates that a general identity of the cases to be placed in this intermediate category may be assumed

DIAGNOSIS

Diagnosis of the intermediate coronary syndrome is most read ily made by excluding the angina syndrome on the one hand and myocardial infarction on the other Advantage can be taken of the fact that by introducing this intermediate category the criteria for the diagnosis of the angina syndrome and myocardial in farction can thereby be sharpened Although coronary atherosclerosis is to be regarded as the chief predisposing factor this aspect of the diagnosis will be considered here only insofar as it appears in the differential diagnosis

The differentiation between the anginal and intermediate syndrome should be based mainly on a careful evaluation of the symptom pain The more important aspects of this evaluation concern not so much the characteristics of the pain per se but such factors as the history of previous attacks the circumstan ces attending the onset and cessation of pain and the uniformity or lack of it in the clinical picture of the attack

The true anginal attack is usually a mild affair in a person with severe heart disease. Frequently there is a history of repeated attacks with gradually decreasing reserve over a relatively long time. The patient is usually aware of the factors which may bring on the pain and the circumstances or remedies which can be counted on to relieve it. Having experienced an attack, he feels no worse because of it and may even enjoy a brief period thereafter during which exercise tolerance is increased. One attack is much like another and patients are quick to appreciate any significant change in symptoms.

Prolonged duration is the single most important characteristic of the pain itself which suggests the occurrence of something more severe than the anginal syndrome. This should be suspected if the pain lasts longer than a few minutes after the precipitating factor is no longer present or after the administration of a vasodilating agent such as nitroglycerin. The location, radiation, and severity of the pain are far less important as differential clues.

Much more significant than the character of the pain are the circumstances attending the onset Pain arising spontaneously, or at least without obvious cause, usually declares sometime, more severe than the anginal syndrome. Even though the pain is related to factors which increase the work of the heart, the anginal syndrome is unlikely if this represents either a sudden or great reduction in exercise tolerance, it is even more unlikely in the case of an initial attack.

Lack of similarity in the attacks points away from the diag nosis of angina pectoris. This is particularly true with regard to the readiness with which the pain is precipitated, change in the location, character or radiation of the pain, and the ease with which relief is obtained. Less important are such factors as the number of attacks, the severity of the pain and small changes in exercise tolerance.

Differentiation between myocardial infarction and the intermediate syndrome is not difficult if the definition of infarction is kept in mind it may be worth while to recall that an infarct is "an area of coagulation necrosis in a tissue due to local anemia resulting from obstruction of circulation to the area" This is a formidable diagnosis to make on the basis of clinical findings unless they are definite and clear cut. Although infarction may be strongly suspected on the basis of the sudden onset of pain characteristic of myocardial ischemia and the symptoms of heart failure yet the diagnosis is not definite until either there are changes in the electrocardiogram pathognomonic of the systemic response, attributable beyond reasonable doubt, to the absorption of necrotic material from the heart. Even the appearance of

a friction rub indicating pericarditis cannot be taken as def inite evidence of infarction unless it fits into the rest of the clinical picture. In the absence of any pathognomonic indicator it may be difficult almost a matter of opinion to decide when the total clinical picture can be taken as proof of infarction

Except for pain it is the paucity of symptoms in the inter mediate coronary syndrome which suggests that myocardial infarction has not occurred. The physical examination often reveals little that can be regarded as abnormal. The patient may appear well the heart not enlarged the rhythm regular and the heart sounds of good quality The blood pressure may be normal and there may be no evidence of heart failure

Serial electrocardiograms often reveal significant alterations usually lasting for brief periods Depression of the RST seg ments and lowering or inversion of the T waves are the changes most frequently observed However we have observed one in stance consisting of the sudden appearance of Q waves in leads II and III followed by their sudden disappearance and one in stance of the temporary appearance of right bundle branch block Sometimes significant electrocardiographic changes are not ob served and the question arises whether or not to obtain records with the patient exposed to anoxia or after exercise. In our opinion there is a serious risk in 50 doing we have always de layed in carrying out these tests until it was deemed entirely safe Possibly because of this delay they were found not to be very helpful The most useful procedure is to obtain records at very frequent intervals in the hope of capturing ephemeral al terations

Definite evidence of a generalized systemic response which can reasonably be attributed to absorption of necrotic material from the heart is lacking If frequent determinations of the white blood cell count and the sedimentation rate are carried out a pattern may be established which will furnish a clue to the diagnosis of myocardial necrosis. However individual variation reliability of technic and the nonspecific character of these tests must be kept in mind in the evaluation of such results

CLINICAL COURSE

The clinical course is usually very mild unless complications arise Indeed it is sometimes difficult to keep the patient under proper observation until such time as the symptoms are no longer regarded as a possible prelude to myocardial infarction. In some instances a series of attacks of pain over a period of a week or longer may make it seem likely that severe damage to the heart has occurred but there may be no evidence of infarction Com plications may arise suddenly without warning or gradually in which case they may be declared solely by alterations in the laboratory findings. It is the most frequent complication, but sudden death due presumably to ventricular fibrillation may occur

TREATMENT

Treatment of the acute symptoms rarely presents a problem but expert judgment is required to avoid, on the one hand, in stituting unnecessary measures yet, on the other, to take ade quate precautions in view of the possibility of myocardial in farction developing A period of observation is essential during which time it is desirable to obtain serial electrocardiograms and to determine if there is a systemic response to tissue necrosis The patient may be allowed the freedom of a room but anything more strenuous should be avoided, including stressful diagnostic procedures The individualization of treatment should be based not only on the initial clinical picture and the evolutionary changes which may follow but on such factors as the age of the patient, the nature and degree of underlying disease and dis orders, and the feasibility of carrying out measures which might be recommended Physical, psychologic, and economic factors must all receive consideration

The use of anticoagulant drugs will nearly always come up for consideration In a relatively young and otherwise healthy person with mild symptoms, who is suffering an initial attack, the indications point away from rather than toward this therapy

DISCUSSION

This attempt to distinguish a particular type of coronary heart disease differs from other such attempts in various respects or degrees It resembles other attempts in that the symptomatology is anchored to the anginal syndrome on the one hand, and the myocardial infarction on the other It differs in that it delimits a smaller but more homogeneous group of cases Thus, it is far less inclusive than the syndrome acute coronary insufficiency, described by Master and his associates is It excludes all in stances where the principal predisposing factor is not coronary heart disease. It is assumed that symptoms are due to myocardial ischemia but as Blumgart and his associates is have shown so well different pathologic mechanisms may be involved.

It might be objected that the intermediate coronary syndrome may represent the premonitory phase of myocardial infarction and that a final diagnosis can be made only in retrospect. This objection leaves the clinician with the alternative of making a diagnosis of infarction before the fact. It is true that an initial diagnosis of the intermediate coronary syndrome will often have to be changed but this disadvantage is outweighed by the advantages. From the clinical point of view there can hardly be any objection to making a diagnosis based on the findings up to

the moment, it is better to wait until the evidence is adequate before making a diagnosis of infarction Furthermore by introducing a middle category the way is clear to define more sharply the anginal syndrome and myocardial infarction we can eliminate such terms as status angiosus and atypical infarction In creasing experience will lead almost surely to a sharper dis tinction between the intermediate coronary syndrome and myocardial infarction based on the initial signs and symptoms and this will pave the way toward better treatment

The choice of a term to distinguish this middle group is im portant otherwise it will not win general acceptance. It should not have an anatomic or pathophysiologic connotation which might apply equally well to something else Scherf and Golbey have emphasized this point with regard to the term coronary insufficiency. It is also better to introduce a new term than to attempt to redefine an old one

SUMMARY

The intermediate coronary syndrome may be defined as a com plication of coronary heart disease in the nature of an acute attack which is distinguishable from the anginal syndrome by an evaluation of the pain and distinguishable from myocardial infarction by the absence of the characteristic signs and symptoms of infarction This syndrome is limited to cases in which the predisposing factor is coronary heart disease and the pre cipitating factors may be obvious or obscure The characteristic clinical picture includes pain nonspecific electrocardiographic changes minimal or equivocal systemic effects and little if any evidence of circulatory failure

Differentiation from the anginal syndrome is usually easy be cause symptoms either develop spontaneously or there is a dramatic decrease in exercise tolerance literally from one day to the next Differentiation from myocardial infarction is based mainly on the absence of electrocardiographic alterations con sidered to be pathognomonic of myocardial infarction and the absence of systemic effects or a friction rub attributable to mvocardial necrosis

The clinical course is usually short and ends with recovery or the development of further injury usually infarction. The treatment should include the relief of any obvious precipitating factor the possible use of anticoagulant drugs and a period of observation beyond which complications are unlikely

The advantages in differentiating this middle category of cases of coronary heart disease include (1) the possibility of defining more sharply the anginal syndrome and myocardial in farction and (2) the stimulation of interest in the early recogni

tion and treatment of complications of coronary heart disease which are not likely to end in infarction

The term intermediate coronary syndrome would seem to meet the clinical requirement in designating these cases

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SPECIFIC ANTIBIOTIC THERAPY

From year to year more and more cases are failing to respond to anti biotics indiscriminately selected and administered in the treatment of infections These facts point to the necessity for determining as quickly as possible by means of laboratory tests the causative or ganisms and their sensitivity to the available antibiotics. When this knowledge has been gained the most potent antibiotic or combination of antibiotics should then be employed in the treatment of the case

⁻FRANK L MELENEY M D and BALBINA A JOHNSON B A

in Surge y Gynecology and Obstet ics p 275 Sept 1953

GASTRECTOMY IN THE TREATMENT OF PEPTIC ULCER IN THE AIR FORCE

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HERBERT V SWINDELL Capt n, USAF (MC)

THE criteria for gastrectomy in the patient with peptic ulcer have been agreed upon by surgeons all over the world for many years In general there are six major indica tions massive hemorrhage gastric ulcer obstruction chronic recurrence repeated hemorrhage and intractability Theoretically these indications are clear but the proper interpretation in the individual case is often difficult. This is particularly true in military practice because of the intangible factor of motivation There are some instances when one is forced to operate on a patient who is known to be poorly motivated for military serv ice however one should never be guilty of doing an elective operation of this magnitude and later find that the patient was poorly motivated all the time Every peptic ulcer patient being considered for an elective gastrectomy should have a thorough neuropsychiatric evaluation prior to operation and if it is determined that the patient is poorly motivated and/or will not be come adjusted to the service separation from the service should be considered as the best definitive answer Particularly in the military service should definitive surgical procedures be reserved for the true medical failures and those cases where on eration is urgently indicated to save a life

MASSIVE HEMORRHAGE

The proper treatment of this condition is still controversial as is reflected by the magnitude of articles in the literature in rocent years. Ity and others stated that most patients would respond to medical therapy and whole blood transfusions but that a few (probably five percent) would bleed to death in spite of the best medical management. Holman reported a 13 percent mortality in 161 patients treated conservatively at the New York Hospital from 1932 to 1939. He stated that most patients could be easily controlled but that there was a 50 percent mortality in two groups of patients those who continued to bleed from 24 to 48 hours after being placed on strict medical management and those who statted to bleed in the hospital while under strict medical man

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agement Since 1940 it has been that hospital s policy to perform immediate operation on patients in these two groups, the result has been a drop in mortality to five plus percent in 257 patients Stewart and others' and Welch' have shown that early gastric resection definitely outweighs the risk from continued bleeding

In this day of blood banks and improved methods of conservative management, a combined medical and surgical program should realize the best possible results Daly and associates in 1948 reported excellent results with the use of phosphate buffer and topical thrombin, and in 1951 Cantor and co-workers reported almost equal control with absorbable gelatin sponge (gelfoam) and thrombin Bowers and Possett treated 150 patients by combined medical and surgical management, with a mortality of 13 percent

The combined medical surgical routine advocated by Daly and others has been found to be a most excellent and satisfying meth od of control in these difficult to handle patients Control is usually immediate and when it is not it is readily obvious Also. of great importance, one is usually aware of fresh bleeding after control long before this unhappy situation is recognizable by the clinical picture Early surgical intervention should be resorted to if control of hemorrhage cannot be maintained Crohn in a col lective review of the literature, recently reported a 10-percent average operative mortality in those patients operated on in the first 24 to 48 hours of bleeding, and a 25 percent average mor tality in those operated on after 48 hours of hemorrhage It is pointed out that, for obvious reasons, patients over 40 years of age may be more difficult to manage conservatively Therefore. immediate surgical intervention should be considered in this group when the slightest indication of failure exists Crohn found a mortality of from 15 to 25 percent in hemorrhaging patients over 45 years of age treated medically, and advocated prompt operative treatment provided competent surgical care was available. In the average surgeon s hands a patient will have a better chance for recovery and subsequent good health if gastrectomy is performed as an elective procedure under optimum conditions rather than as an emergency Therefore if hemorrhage is controlled, operation should be postponed until the patient and the surgeon are in the best possible condition for it, even though it is obvious from the onset that the patient should eventually be operated on

GASTRIC ULCER

In recent years the concept that gastric ulcer is primarily a surgical disorder has become widely accepted. This belief devel oped mainly because there is no positive clinical or laboratory means of differentiating between benign and malignant ulcers. It is not generally believed that benign ulcers if untreated will

undergo a malignant change but that a primary malignant ulcer may be treated medically and the opportunity for surgical cure lost Marshall in 1953 reported a series of 411 consecutive gas tric ulcers of which 15 8 percent were malignant. He stated that there was insufficient histologic evidence to warrant a con clusion that gastric ulcers present a greater disposition to malig nancy He believed however that secondary malignant degenera tion would unquestionably occur in some chronic gastric ulcers but probably not in more than five to six percent Raydin and Horn in 1953 emphasized the fallibility of present diagnostic technics and found at operation that 11 percent of 94 ulcers which had been clinically diagnosed as benign were actually malignant They believed that upwards of 10 percent of chron ically benign ulcers may develop a malignancy at the ulcer site Ewing and Mallory stated that malignant degeneration rarely occurred in a benign gastric ulcer The former stated that such an origin of malignant ulcer probably accounted for not more than two to three percent of gastric carcinomas

An editorial has stated that the dictum that all gastric ulcers should be removed following confirmed diagnosis is rapidly
losing its authority. Most internists and surgeons recommended at
least a preliminary trial of medical management for a few weeks
or months and some favored continuing medical treatment. The
rather common belief that all ulcers of the greater curvature of
the stomach are malignant is certainly not true in Marshall's
series of 346 beinging gastric ulcers. 10 (three percent) were on the
greater curvature and of the 65 malignant ulcers two (three per
cent) were on the greater curvature. Only in the antrum and
fundus was the incidence of malignant ulcer higher than that of
beingin ulcer.

It is believed that each case should be individualized and if the ulcer seems unquestionably benign clinically and tail ologically a rigidly controlled medical program may be in stituted if the ulcer is benign there slould be rapid relief of symptoms and roentgenot, taplic evidence of healing within four to five weeks. If healing does not occur within this period surgical intervention is certainly indicated On the other hand is healing takes place careful follow up should be carried out for from six months to a year. Any recurrence following apparent healing is an indication for surgical intervention.

OBSTRUCTION

Gastro retention occurs in about 25 to 30 percent of all patients with gastric and duodenal ulcers Of this group however only 20 percent of those with gastric ulcers and 10 percent of those with duodenal ulcers have organic obstruction With proper conservative management gastric retention in the remaining

patients disappears Experience certainly teaches that every patient with pyloric obstruction should be given a trial of strict medical management If the condition is not relieved, then operation is indicated

CHRONIC RECURRENCE AND REPEATED HEMORRHAGE

Chronic recurrence and repeated hemorrhage as an indication for operation are observed together just about as often as each is singly Individually, each indicates only a relatively mild need for operation and their occurrence together is hardly more of an excuse for surgical intervention Jahiel14 stated that it is well established that a periodic pattern of attacks and recovery characterizes the natural history of uncomplicated peptic ulcer Ivy and his associates stated it is uncertain whether repeated re currence of hemorrhage in patients who are not under strict management should be an indication for operation. They further stated that studies have shown that after apparent cure, patients with bleeding ulcers tend to have recurrence of their ulcer with hemorrhage more frequently than do patients with nonbleeding ulcers They emphasized that collected data from the literature indicates that subsequent hemorrhages are generally no more dangerous than the first It is most important however, not to confuse repeated small hemorrhages with massive hemorrhage

Of course in a situation where a person is in the hospital so often that he is no longer effective on his job, something has to be done In civilian life many patients who have a gastrectomy for these indications are in reality operated on at their request because of the nuisance of long periods of diet and repeated difficulties after breaks in their medical routine. In such in stances, results will probably be satisfactory because the patient, realizing what he is getting into is desirous of the operation and assumes part of the responsibility for the results. This is not true in military practice however because the government ends up with the full responsibility for the results. One should never lose sight of the fact that the responsibility for the health and subsequent effectiveness of the particular patient after surgical intervention rests with the surgeon.

INTRACTABILITY

Intractability appears to be an uncommon indication for operation in the Air Force. The typical intractable ulcer is one which recurs chronically and which does not respond to medical management during the acute episode or flares up as soon as strict medical management is relaxed. Many patients whose ulcers appear to be intractable will be helped by a change in their treatment or by the addition of psychotherapy to remove stress factors. Recently such a patient was seen at this hospital. A 23 year old man with two years service, had had aerophagia

practically all his life and particularly in time of stress Nine months prior to admission he had had episodes of epigastric pain and belching relieved by sporadic medical treatment. On arriving in Alaska leaving a young wife and seven month old baby at home his discomfort became pronounced He reported to his dispensary where he was given aluminum hydroxide gel (amphojel) and was examined radiologically The roentgenogram was nega tive but his symptoms became worse. He was then transferred to this hospital and treated with bed rest a combination of phenobarbital and belladonna aluminum hydroxide gel and milk and cream for one week but his symptoms became more pronounced Roentgenograms revealed a definite duodenal ulcer Gastric analysis with histamine stimulation gave a peak of 79 acid and 110 total in one hour His pain became more severe there were more episodes of vomiting and nightly retention ranged from 900 to 300 cc containing an average of 70 and 95 combined acid A gastric tube was passed and after three days of suction he felt better and seemed to be doing well on an aluminum hydroxide gel regimen however 48 hours later he was again in trouble and complaining bitterly. At this time it was believed that the ulcer was probably intractable. In surgical consultation it was suggested that the stress of being separated from his family might be a factor in his failure to respond to apparently adequate medical therapy Whereupon the gastric tube was replaced and the patient informed that if he responded quick ly to medical treatment he would be sent back to the continental United States but if not an operation would have to be performed His outlook changed immediately to one of cheerful anticipation Suction was continued for 48 hours at the end of which time he was again placed on a Sippy regimen. His recovery was rapid and without remission. The lesion healed and the patient was evacu ated to the continental United States for further treatment and evaluation The patient could have easily been operated upon and if he had been the result would most probably have been poor

PRELIMINARY REPORT

In the fall of 1952 a long range study of patients with peptic ulcers who had gastrectomies in Air Force hospitals was in augurated It was hoped that a series of at least 200 cases could be obtained To date only 59 have been collected however as these patients came from only seven Air Force hospitals and there are some 125 hospitals in the service it is hoped that the original goal will eventually be reached Thirty nine of these cases were in military personnel with one or more years elapsed since operation Questionnaires were sent to these 39 patients and answers were received from 36 by March 1954 This report will be limited to a review of these 36 patients

Thirty five were men and one a woman, the latter a captain in the Air Force Nurse Corps Thirty one percent were officers and 69 percent were enlisted men The ages ranged from 23 to 58 years, 31 percent falling between the ages of 23 to 29, 42 per cent, between 30 and 39, and 27 percent being 10 years of age or over Thirty six percent of the patients had less than eight years of service at the time of operation, and 64 percent had eight or more years. The average length of service was 11 years, with a spread of from one to 37 years. The average duration of symptoms prior to gastreetomy was four years, with a spread of from 0 to 12 years.

All patients presented at least one of the six major indications for surgical intervention discussed proviously. For purposes of study the patients were divided into two groups—those having, urgent indications and those with possibly questionable in dications. Those with urgent indications—massive homor thage gastric ulcer, and obstruction—comprised 52 8 per cent of the patients. Phose with questionable indications—chron is recurrence repeated hemorrhage, and intractability—comprised 47 2 percent. Interestingly enough, many of the patients in the questionable group presented more than one of the three indications.

The operative procedures employed were numerous but Polya's operation or some modification thereof was the most frequent choice Only nine patients (25 percent) were estimated to have had more than 75 percent of the stomach removed, and the remaining 75 percent were estimated to have had 75 percent or less of the stomach removed

Half of these patients have been followed for more than one year postoperatively, and 28 (88 percent) were still on active duty of the eight patients no longer on active duty, three were normally separated and five were retired. The series is too small and the follow up too short to furnish conclusive data but some points of interest have been derived.

In evaluatin, the results the patients were divided into three groups group 1, those with excellent results, group 2, those with satisfactory results and group 3, those with poor results

Patients were considered to be in group 1 if they were on a regular diet and had absolutely no complaints Group 2 comprised those well metivated patients who had mild dumping syndromes or other vague complaints, but who had not been deterred from continuing on active duty. Also included were those patients with these mild complaints who were separated from the service through normal channels but who were able to engage in a useful civilian occupation. One of this latter group was a pilot who re-

signed his commission because he was permanently grounded and who is now a civilian airlines pilot

Group 3 the remainder of the series comprised patients having severe dumpin, syndromes and proved recurrences, and included persons retired and pensioned because of persistence of their symptoms after operation or simply because he or she had had a gastrectomy It is pointed out that a patient with an excellent medical result may be a military failure if he is retired from the military service and pensioned because of his operation Cer tainly the results of an elective procedure which are the basis for retirement and pension should not be considered satisfactory An example is one patient in this series a 30 year old technical sorgeant with six and one-half years service who had a gastric resection because of repeated hemorrhage A short time later he was presented to a physical evaluation board because his time of enlistment was up and he did not desire to continue on active duty He was awarded a 50 percent permanent disability and now two years later is a civilian enjoying excellent health and a monthly Government check

The results in °0 patients (56 percent) were classified as excellent in eight (°2 percent) as satisfactory and in eight (°2 percent) as poor Therefore 78 percent of the entire group fell in either the excellent or satisfactory category a tolerable proportion but still less than that reported in the better civilian clinics Milstein reported satisfactory results in 86 7 percent of 90 patients with gastrectomies followed out of 101 operated on between 1940 and 1947 Rauch in 1952 reported failures in only 104 percent of 702 patients operated on between 1940 and 1950 Harvey and others in 1953 reported excellent results in 85 percent of 394 patients followed for from five to 15 years

Of interest but of no direct boaring on final results it was found that 91 6 percent of the 36 patients in our series smoked after the operation and 77 7 percent drank alcoholic beverages All patients with excellent results were smolers. All of the patients believed that the operation was of oither great or moderate value Light, three percent considered that the operation was of great value and 17 percent believed that it was of moderate value. As might be expected, all the patients with excellent results considered the operation of great value. Those who be lieved that they derived only moderate value from the operation were equally, divided between the satisfactory and poor group

Basically there are two factors which have the greatest in fluence on the results of definitive treatment of peptic ulcer patients. These are (1) proper selection of patients and (9) adequate surgery. If selection is careless even though the operation may be adequate the results are likely to be mediacre

conversely, if selection is proper and the operation inadequate, similar results will be observed. If selection is proper and the operation adequate, the results should compare favorably with the highest standards.

In an effort to see if there was any relation between these two factors and the results obtained the excellent and satisfactory groups were combined to form one group, designated "good"

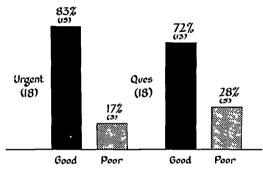


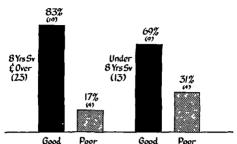
Figure 1 Relation between indications and results There is a 12-percent differential favor ng the urgent group

Of the 19 patients who had urgent indications for surgical intervention, 16 (84 percent) had good results (either excellent or satisfactory), and three (16 percent) had poor results Of the 17 patients with questionable indications, only 71 percent had good results and 29 percent had poor results, a difference of 12 percent favoring the urgent group (fig. 1)

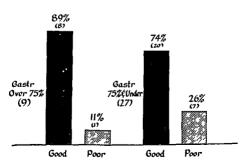
Of the 23 patients with eight or more years service, 19 (83 percent) had good results, and four (17 percent) had poor results Of the 13 patients with under eight years' service only nine (69 percent) had good results while four (31 percent) had poor results a difference of 14 percent favoring the longer service group (fig 2)

Only nine patients were estimated to have had more than 75 percent of the stomach removed eight (89 percent) had good results, and only one (11 percent) had poor results Of the 27 patients estimated to have had 75 percent or less removed, only 20 (74 percent) had good results, and seven (26 percent) had poor

results a difference of 15 percent favoring the more radical procedure (fig 3)



Figur 2 Relation betweel gth frucad sult. The is a 14-p dff tlf or g the gr p with ght or mor ye fsrue.



betw n th amount of t ma h em d d re ult Figure 3 The lat t d ffere tual | vor g the group w th mo th 75 p r There is 15 pe c ce 1 ftb toma b m ved.

SURGICAL TREATMENT

The definitive surgical treatment of peptic ulcer patients should be aimed toward the physiologic reduction of gastric acidity and mothly. This is best accomplished by resecting the acid forming portion of the stomach, neutralizing the gastric contents with duodenal contents, and/or interrupting the nervous innervation of the stomach.

Again using the large number of recent publications on the sub ject as an indication, the best method of accomplishing this end is still somewhat controversial. A gastric resection of 75 percent of the stomach or more seems to be the procedure most widely used By present-day standards it gives uniformly excellent results in properly selected cases, with a minimum of mortality and morbidity In cases where the acid response is unusually high and it is technically feasible, a resection of 80 to 85 per cent of the stomach should be performed " If the psychosomatic component is pronounced it is believed that vagotomy is a valu able supplement to resection The exact evaluation of the severity of the psychosomatic component is difficult to make and is determined to a great degree by experience. The type of person for whom a vagotomy is indicated is one who has been described as a "Lastric personality" If the resection is technically diffi cult, division of the vagus nerves may permit a more adequate mobilization of the esophagus and gastric cardia, thereby facilitating a higher resection

It is desirable to remove the ulcer itself whenever possible as it has been shown that if the ulcer is not resected postoperative recurrences are more likely The American Gastroenterological Association's reported that the response was favorable in from 81 2 to 89 1 percent of those patients whose ulcers were removed, whereas it was favorable in only 65 5 to 78 8 percent of those whose ulcers were not removed. It is not believed ad visable however to risk injuring the pancreas and/or common duct by removing a densely adherent posterior penetrating duodenal ulcer, and a compromise should be effected in some cases Lahey and Marshall20 stated that mortality in partial gastrectomy. particularly in duodenal ulcer, was largely related to removal of indurated ulcers from the head of the pancreas Dunphy and as sociates recently pointed out that postoperative pancreatitis was more common than is realized and that in many instances it was related to injury to the pancreas or its blood supply during gastrectomy Whenever it is advisable to leave the pylorus or portion of the antrum for these reasons, the mucosa should be excised

DISCUSSION

Re evaluation of the entire problem of the surgical treatment of peptic ulcer illustrates that the proper selection of patients is the primary factor governing the satisfactory response to a gastric resection. This small series certainly indicated this to be true Secondary to this but still of major importance the degree of resection exerts influence on the end result Recent reports 2 3 have advocated lesser degrees of resection combined with variationy These procedures are still in their infancy but may eventually prove to be procedures of choice Until such a time however it is believed that surgeons in the Air Force should continue with the time-proved procedures if any uniformity of over all results is to be achieved

This series indicates that the over all results in the Air Force Medical Service so far are fairly adequate It is believed how ever that if more rigid selection of cases is employed the results may soon approach those obtained at the better civilian institu tions In military practice the problem of motivation is of much more importance than in civilian practice and should be thorough ly explored before this type of operation is undertaken In many cases when motivation is in doubt it might be better to deal with the patient administratively rather than surgically

SUMMARY

Analysis of a series of 36 patients with symptoms of peptic ulcer showed that indications for operation in 52 8 percent were urgent (massive bemorrhage gastric ulcer and obstruction) and in 47 o percent were questionable (chronic recurrence repeated hemorrhage and intractability)

In evaluating the possibility that the combination of proper selection of patients and an adequate surgical procedure might be determining factors in obtaining favorable results from opera tion it was found that (1) a 12 percent differential favored those patients whose indications for operation were urgent and (2) a 15 percent differential favored those patients who were estimated to have had more than 75 percent of the stomach removed.

We believe that the main surgical considerations in the treatment of these patients in addition to the above factors are the physiologic reduction of gastric acidity and motility (best ac complished by resection of 75 percent of the stomach or more) removal of the ulcer itself if possible and if the psychosomatic component is pronounced a supplemental vagotomy

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ADDENDUM Since this article was submitted for publication, a total of 132 cases have been collected which will be reported in a subsequent communication

Our responsibilities to our juniors are great and it might be well in we wortred more about how much we are doing for them and less about how much they are doing for us

-- JAMES T PRIESTLEY M D
in Archives of Surgery
p 139 Aug 1954

KOREAN VIVAX MALARIA

A Statistical Analysis of 95 Patients

LOUIS A HALL L ut nat ; or g d (MC) USNR

IN ONE of their excellent series of studies of human malaria published in 1950 Coatney and associates explained the life pattern of the St Elizabeth strain of vivax malaria. They used data compiled from 1949 to 1947 from 195 patients intentionally infected with this strain One of the most significant results of these studies was discovery of the fact that there was an early invasion of the blood stream during the second week after exposure Following this there was a latent period of nine to 10 months, after which a period of repeated relapses occurred with blood stream invasion. This latency is a good illustration of adaptation for survival allowing this temperate zone strain of Plasmodium vivax to survive the cold winter months and continue its life cycle through the mosquito and man during the next infective season. In Korea as Kehoe and Chandler have pointed out, this period is from April through October.

A few months later when a large number of United Nations troops became involved in the korean conflict the value of this and other similar work became apparent korea is an endemic area for P vivaz temperate zone variety Consequently suppression of the initial clinical attacks of this disease was deemed to be important in the maintenance of a healthy fighting force. The suppressive drug chosen for this purpose was chloroquine phosphate one of the 4 mino-quinoline compounds developed during World War II. This was administered to each man in a dosage of 0.5 gram per week and proved very efficacious in the suppression of the initial attacks.

Unfortunately the whole problem was not solved as the mne to 10-month latency period of this disease before remission into the repeated erythrocytic stages provided time for the transfer of large numbers of veterans back to this country. With the loss of incentive for continuing prophylactic medication the suppressive drug was dropped and concurrently the malarial attack rate in 1951 began to rise in this country. There was an

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estimated total of 12,000 cases of malaria in horean veterans in this country during 1951 alone

A number of papers? *-- reviewed the case histories of veter ans who manifested the disease after returning to this country. These reviews, covering from a few to as many as 215 cases, showed that the disease had a fairly characteristic course. The amount of anomia and the differential counts accompanying the illness were about the only points on which authors varied to any great extent. The diagnosis was considered to be fairly easy by one group, whereas Hale and Halpenny were of the opinion that it frequently presented a diagnostic challenge.

Year	Number of patients	Number of attacks	Number of patients with recurrent attacks
1951	30	41	8
1952	25	28	3
1953	40	42	2
Total .	95	111	13

TABLE 1 Patients 1 1th ko ean vivax mala 1a at USNH Oakland

O p t thad four r current attacks of malar

The following review incorporates the histories, findings, treatment, and diagnostic problems encountered in 111 attacks of malaria in 95 patients seen at this hospital over the three year period from January 1951 to January 1954 In many instances these attacks have been described collectively, but where significant differences arise they have been compared on a yearly basis In this way the general nature and course of the disease as well as the progress in treatment during the three years can be ascertained, and future problems that may be encountered will become more evident

PATIENTS HISTORY

Table 1 shows the number of patients studied, on a yearly basis. The number of recurrences listed were only those seen at this hospital. As no long term followup was made in these cases the exact number of recurrences is not known Lighty one patients, presenting 86 attacks, were admitted here primarily for malaria the other 25 attacks occurred either in the 14 patients who were in the hospital for unrelated conditions, or were recurrences in the first group while they were convalescing from the previous attack.

The patients were all men between 17 and 43 years of age Seventy percent of them were between 19 and 23 years of age The fact that no Negroes were seen here with the disease is ourte significant considering the ratio of Negro to Caucasian soldiers in the endemic area However the Negro race shows an apparent immunity to tertian malaria and very few of the pre viously reported patients have been members of this race

TARIF? The of onset by to admiss on

	201 pr. 10 ann. 133 on	
Days	Number of attacks	
>1	2	
1	8	
2	13	
3	24	
4	7	
5	6	
6	3	
7	9	
8 14	9	
15 21	3	
22 28	2	
86 ks 81 p	dm dp mattlyf mal ia	

Eighty two of the patients were marines seven were veterans two army personnel, and four sailors. One of the last denied ever being closer to horea than 2 500 yards offshore which made his mode of infection rather speculative

The average period of latency could not be determined in this group because the time of infection was unknown It is interest ing to note however that 16 patients had been away from Korea for 11 months or longer One man had returned 18 months pre viously but had had a clinical attack of malaria 16 months be fore the present admission

Twelve of the 30 patients seen in 1951 had had one or more previous clinical attacks of horean malaria before being seen at this hospital In 1952 five patients had suffered previously from this disease while in 1953 only three of the 40 patients had been stricken previously. The decreasing incidence year

by year was probably due to increasing recognition on the part of the troops of the importance of scrupulously taking their suppressive medication, at least while in the endemic area

Table 2 indicates the length of time these patients were symptomatic before they were admitted. In those with symptoms for over six days the onset was generally gradual and not accompanied by acute and sudden chills and fever, as is more characteristic of the disease. In many of these patients also, the characteristic exacerbations of symptoms every 48 hours were absent, or at least did not occur until shortly prior to admission. The periodicity of symptoms in this disease in 83 attacks is shown in table 3. As is evident from the table, a significant number of the attacks (35 percent) did not demonstrate the typical pattern of fever, chills, and accompanying symptoms occurring every 48 hours and lasting two to four hours each time. This was a definite factor, as will be discussed later, in causing difficulty in diagnosis. The fact that in 28 attacks the frequency of symptoms was not elicited did not give rise to many problems, because these attacks had been diagnosed as malaria before admission, and a less extensive history was taken than in those instances where the diagnosis was in doubt

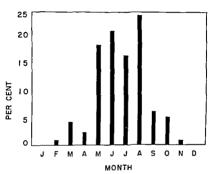
TABLE 3 Periodicity of symptoms

Periodicity	Number of attacks*	Percent
Daily	22	26 5
Every other day	54	65 0
Every third day	5	60
Every fourth day	1	12
Every fifth day	1	12

R ddin 83 att ks

The symptoms and complaints were many and varied, and have been tabulated in table 4 in the order of frequency Shaking chills, followed by a high fever, were present in all attacks except that of one patient who did not have chills Although not a complaint, all the attacks seen here were accompanied by profuse sweating during the period of fever The headache in practically all instances was retro-orbital or frontal and generally very severe

the normal range of hemoglobin determinations, 18 7 percent showed significant anemia Considering 12 to 14 grams per 100 ml as low normal 57 5 percent of the cases fell in this classification Only 23 8 percent of the cases showed definitely normal hemoglobin levels



F gur 1 Monthly ate of occurr ce 111 attacks.

The erythrocyte sedimen ation rate was measured in only 50 attacks and showed an elevation of over 10 mm per hour in 70 percent of these

Urinalyses were recorded in 103 attacks 25 2 percent show ed pyuria with more than five leukocytes per high power dry field Only two specimens showed hematuria and six minimal albumi nuria

The number of positive serologic tests varied year by year In 1951 those patients with 05 6 percent of the attacks had positive serologic tests this rose to 69 2 percent in 1952 and fell to 5 0 percent in 1953 In all cases it was believed to be a false positive reaction due to the malarial infection With newer technics however such as the cardiolipin test as proposed by hent and others the incidence of false reactions was greatly decreased by 1953 There was no relationship ap

parent between the time, during the course of the illness, that the blood for the serologic test was drawn and the number of false positive reactions which occurred

Studies of liver function were done in 13 attacks with seven showing various degrees of damage, especially by the cephalin cholesterol flocculation method, and six showing no damage

TABLE 6 Physical find ngs in 111 attacks

Physical findings	Number of attacks	Pe cent
Splenomegaly	31	28 0
Hepatomegaly	13	117
General adenopathy	11	10 0
Pharyngitis	7	63
Herpes simplex	7	63
Jaundice	5	4 5
Conjunctivitis	5	4 5
Pneumonic rales	4	3 6
Heart murmur	4	3 6
Costov stebral angle tend mess	4	36
Left upper quadrant tenderness	3	2 7
Nuch I rigidity	3	27

All fidg lim d 52 p tof th ticks 48 p c at w ymptom t c

The malarial smears here were all treated with Wright's stain, and were thin smears. The reason for this vas that they were generally done by student technicians who, because of limited time, are taught only this method for staining and making portpheral blood smears. As a result (table 8), a large number of attacks were prolonged because smears were read as negative.

It was found, however, that the largest number of trophozoites in the blood stream seemed to appear between the stage of the chill and fever or as the temperature began to rise, and the highest percentage of positive smears was obtained during that time of the attack

TREATMENT

In 1951, two drugs were mainly used to combat this disease amodiaquin hydrochloride (camoquin hydrochloride) and chloroquine phosphate, both suppressive agents The results obtained were excellent with respect to controlling the clinical attack.

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3-4 000	=	120	Libi	2	15.8	688	61	2 5
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10-11 000	7	2.5				15 15 9	-	3,7,8
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for these drugs destroyed the hemoparasites. Due to the fact that the tissue forms were unaffected, however, the recurrence rate as seen here was rather high In 1951, eight of the 30 pa tients had a recurrence from two weels to three months following treatment of the initial attack, and one of these patients had three recurrent attacks at monthly intervals. The dosage of amodiaquin hydrochloride was 0 6 gram given in one day, while that of chloroquine phosphate varied from 0.5 to 4.0 grams administered over a three day period. Also three patients were treated with quinine and quinterine hydrochloride (atabrine hydrochloride). If the recurrence occurred after amodiaquin

TABLE 8 Time in hospital before obtaining positive smear

Number of days	Number of attacks*	
Before admission	17	
Day of admission	47	
1	12	
2	3	
3	10	
4	4	
5	4	
6	0	
7	1	
8	2	
		

R rdd 100 ttak

hydrochloride was given, chloroquine phosphate was used the second time, or vice versa. Long term followups are not avail able but according to previous reports, 11-15 the disease is limit ed to about three years. Therefore, if each attack is treated, the time for recurrence should be increasingly prolonged

In 1952, there were only three recurrences in 25 patients Treatment that year was essentially the same as in 1951, 15 receiving 0 6 gram of amodiaquin hydrochloride, nine receiving from 2 5 to 4 5 grams of chloroquine phosphate in divided doses, and one receiving 8 grams of amodiaquin hydrochloride in all and

15 mg of primaquine diphosphate daily for 14 days The efficaciousness of the last drug was just becoming known about this time. It is probable that the recurrence rate was higher than is apparent in this report although the subsequent attacks were treated elsowhere.

In 1953 when primaquine diphosphate had become obtainable and had been proved to be curative for malaria, " a routine mode of treatment was established when the seasonal attacks began again This consisted of 1 gram of chloroquine phosphate initially followed in six hours by 0.5 gram and then 0.5 gram a day for two days A daily dosage of 15 mg of primaquine diphosphate then instituted for 14 days It also had been shown that primaquine diphosphate destroyed the tissue forms but did not alleviate the present clinical attack as rapidly as did the suppressive drugs especially chloroquine phosphate thus the combination of the two was used Two of the 40 patients seen that year however received only chloroquine phosphate for their initial attack but both suffered recurrences within the month and the established treatment was then used

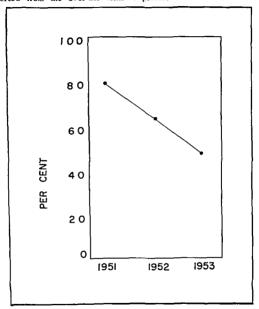
Treatment by all of these methods proved dramatic in alleviating the symptoms of the clinical attack but it is now possible with the method of treatment used in 1953 regularly to cure a person affected by this disease Johnson for example found a 106 percent recurrence after this mode of therapy, as compared to 36 percent following the administration of chloroquine phosphate alone

DISCUSSION

The number of cases of korean malerie in this country at resent should pradually decrease year by year As already indicated in this atticle however the problems presented by this disease have been rather considerable in the past and some may well continue to be important in the future.

The problem of diagnosis proved to be a major one at this hospital The diagnostic acumen (lig 2) progressively became less until in 1953 only 49 percent of the cases soon were initial ly diagnosed either as malaria or more specifically as P vivox malaria. The course of this disease is fairly typical and yet one to variance in one factor or another, it was diagnosed as having a cause other than the prassite P vivox in as much as 50 percent of the number of cases each year

The main factors responsible for mistaken diagnoses were the histories of these patients. The long latency period the fact that the patients may have been in this country as long as 16 months was one important point. The similarity of this disease to other illnesses is evident from the initial diagnoses (table 5), and when certain symptoms more characteristic of diseases other than malaria were of prime importance to the patient, the attention of the examining physician was often diverted from the over all clinical picture. The fact that in 35



F gure 2 Percent of attacks per year diagnosed as malana,

percent of the attacks the symptoms did not conform to the textbook description of occurrence every 48 hours, with relative freedom from difficulty between attacks, further contributed to inaccurate diagnoses

Because the physical findings in this malady are so few, there is no indication, from examination of the patient, of the diag nosis, except for splenomegaly, unless one considers the dis

32

similarity in number and severity between the symptoms and Signs

The problem of obtaining positive malarial smears even during the acute phase was a large one, and caused delay in treatment in many of the patients. The technic of using thin smears and Wright's stain was not adequate therefore other methods, such as thick smears with Giemsa's method as proposed by Johnson should be used

TABLE 9 Ext duag t p d b f rmed

P dur	Numbe f k
Lumba p tur	11
Blod ulur	39
U culur	4
Fbrl ggl	8
Ht phil ggl n	11
Rkttiald flnzgglti	2
S lultur	2
The tulur	3
Elet digram	1
P em-bound d	1
L e funct tud	13
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Further evidence of difficulty in diagnosing this disease is indicated by the large number of extra diagnostic procedures done in these cases (table 9) all of which were negative except for the studies of liver function as previously noted

The problem of treatment has now been practically solved although of course search for newer and better drugs will con tinue The routine use here of chloroguine phosphate and prima quine diphosphate caused no side reactions in the 40 patients who received these drugs and indeed our experience coincides with previous reports and work on the minimal toxicity

CONCLUSIONS

horean vivax malaria has now become an entity which should become less and less of a problem in this country. The armed services have instituted a new mode of prophylactic treatment whereby veterans returning from Korea are placed on a 14 day treatment with 15 mg of primaquine diphosphate daily, which should be sufficient to eliminate the tissue forms these men may be harboring

A few veterans, however, can still be expected to miss the therapy and develop the clinical symptoms after their return From findings and diagnostic problems encountered here it seems likely that these pritents may present difficult diagnostic problems, especially to a physician who has not had previous experience with this malady

To solve the problem, the following should at least raise the suspicion of the examining physician. The patient is a white male veteran with previous duty in horea. He complains of chills, fever, headache, generalized aches, and/or other varied symptoms. These usually occur every other day. Physical findings are probably nonexistent, with the exception that he may have splenomegal. The white blood cell count is normal or low, the differential count nonspecific. There may or may not be a slight anemia. If malaria is then suspected, it can be confirmed by a thick peripheral blood smear treated by Giemsa's method. At present, the treatment of choice is 10 gram of chloroquine phoses phate initially, followed by 0.5 gram in six hours and 0.5 gram daily for two days. Primaquine diphosphate is begun also on the first day in a dosage of 15 mg and carried through for 14 days.

The patient will respond rapidly to treatment and need not be hospitalized The waste in manpower, as previously caused by this disease, can be eliminated At this hospital alone, the 95 patients admitted for tertian malaria represented 1,346 days lost to active service

The experience we have had with this variety of tertian malaria should serve as a warning to physicians in this country in the future Our progress in methods of travel, with the consequent increased accessibility of other parts of the world, is bringing us closer and closer to diseases not before affecting the inhabitants of the United States. The scope of medical knowledge can no longer be limited to diseases common to our own environment, but must embody more and more those afflictions common to distant lands. Therefore, research concerning the treatment of these diseases may give us a cure for them before they become such major problems, both to the nation as a whole and to such groups as the armed services in particular, as has vivax malaria.

SUMMARY

A review of Korean vivax malaria during the years since the onset of hostilities in that country has been presented vith the histories physical and laborators findings and treatment of the 111 episodes in 95 patients seen at this hospital which have been used statistically to add further weight to the subject

The problems of diagnosis and treatment encountered have been discussed and conclusions from the study and from previous reports concerning this disease have been drawn

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NEW TRENDS IN THE TREATMENT OF TUBERCULOSIS

Analysis of 1 358 Records From a Large Army Hospital

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ITHIN the past five verts many changes have occurred in the management of tuberculosis. These changes have developed gradually and subtly, and are largely the result of a growing understanding of specific chemotherapy. The better results outsined with this therapy have made pneumothorax, pneumoperitoneum and extremely long periods of hospitalization less necessary. Chemotherapy has made it possible for surgeons to operate on lungs infected with tuberculosis with relative safe ty. Through cumulative experience, surgical technic has been improved especially in segmental resections. Present treatment regimens, however, are far from crystallized and older opinions are constantly being re evaluated. For this reason it is believed worth while to review the present-day management of tuberculosis at this hospital through its annual report.

In addition to purely medical problems, there are many administrative problems associated with the treatment of military personnel for tuberculosis. Decisions must be made for military personnel in regard to the advisability of their temporary or permanent retirement from service the feasibility of their treatment in Army nospitals, the amount of physical activity they are permitted on return to duty, and the potential danger of relapse. We believe that it is important for members of the medical services to be aware of the basis for these decisions and will discuss these specialized aspects of the tuberculosis problem as part of this report.

The preparation of this report has been greatly aided by the use of the punch card described in a previous issue of this Jour nal; I this card has facilitated the handling and sorting of the large volume of data so that a careful evaluation could be made

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MATERIAL

The patient population of this hospital consists of three different groups military personnel, dependents of military personnel, and beneficiaries of the Veterans Administration Some what different medical and administrative problems were present in each group and had considerable bearing on the handling of each group The military patients were in large part young men

TABLE 2 Dist ibution of patients discha ged from the tuberculosis section, by type of disease 1952 and 1953

	19	52	19:	53
Diag s s	Numbe of pt nts	Perc nt	Number of p ti nts	Pct
Nontub cul us Tuberculous A tive tuberculosis Ina t v tube ul sis	239 1184 (1097) (87)	16 8 83 2 (77 1) (6 1)	207 1151 (1079) (72)	15 2 84 8 (79 5) (5 3)
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with relatively recent disease, which developed since the chest roentgenograms made at the time of entry into military service. The civilian dependent patients were for the most part young wives of servicemen. They, therefore, represented a good cross section of all stages of tuberculosis.

Through a contract with the Veterans Administration, 240 beds for veterans with tuberculosis were provided at this hos pital These patients were usually older men who had a high in cidence of far advanced cavitary disease (table 1) Frequently their place of residence was hundreds of miles from Denver, and many were recalcitrant patients who had left other hospitals

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against medical advice. Their management was very difficult be cause of the severity of their disease and behavior.

The different results obtained in these groups of patients will be shown in this report. The results obtained in 1953 will be compared with those reported for 1952. All of the terms pertaining to tuberculosis used in this report are in strict accord with the definitions used by the National Tuberculosis Association (NTA) Standards Such terms include active, arrested, inactive, *good chronic *2.1

RESULTS

During 1953 1,358 patients were discourged from the tuberculosis service of this hospital (table 2) All of these patients were suspected of having tuberculosis, because patients in whom tuberculosis was not the diagnosis on admission were sent directly to the nontuberculous chest disease section Of these 1,358 patients, 207 or 15 percent were found not to have tuper culosis. As shown in table 3, the incidence and type of non tuberculous diseases were similar in 1952 and 1953.

As shown in table 2, 72 patients (5 3 percent) were discharged in 1953 as having inactive tuberculosis on admission. The remaining 1,079 patients (79 5 percent) were considered to have active disease. Of the patients with active tuberculosis, 877 percent had pulmonary disease, nine percent had pleural effusion alone and 3 3 percent had extrapulmonary tuberculosis. Of the patients with active pulmonary tuberculosis, 20 3 percent had minimal disease on admission. 49 5 percent, moderately advanced and 30 2 percent, far advanced. These percentages closely parallel the 1952 figures.

Table 4 shows the final disposition of the patients with pul monary tuberculosis

Military Patients shown in the "other" category were transferred to Veterans Administration hospitals before completion of treatment, "Irregular" discharges (defined as the un co-operative patients who either left against advice or were discharged for failure to follow treatment) were very low (13 percent) due to Army disciplinary powers over service personnel Because these persons were AWOL their eventual return was almost certain When military patients were released to the Veterans Administration without the restraint of military discipline irregular discharge rates for veteran patients other than military transfers was 15 percent in one of these hospitals 'The small number of deaths was due in part to the fact that most of the patients had early disease

Vateran Patients Two factors were noteworthy here (1) a high irregular discharge rate (43 5 percent) and (2) the comparatively high mortality There was some improvement in it regular discharges over 1952 A minor reason for this improvement may have been the patient's realization that more effective therapy than prolonged bed rest was a aliable The higher death rate was not unexpected in this older group which includes many patients with advanced chronic pulmonary disease

Dependent Patients This group was most representative of the average civilian sanatorium Their death rate was low it regular discharges were relatively few reflecting the more cooperative attitude of voman patients

TREATMENT

We still believe that the treatment of a pa Hospitalization tient with tuberculosis is best accomplished in a hospital or sana.orum Initial hospitalization is almost always necessary for proper medical evaluation and bacteriologic study In addi tion the danger to others by permitting the patient with positive snutum to remain at home makes hospitalization early in the dis ease extremely important. This is the general belief throughout the country where adequate facilities are available However the length of hospitalization has gradually decreased At this hospital the average patient with minimal disease treated to the inactive stage is now hospitalized from 11 to 15 months with moderately advanced disease from 12 to 18 months and with far advanced disease at least 15 months. The major discharge criterion is inactive disease which means cavity closure nega tive sputum and roentgenogram stability for six months Outpatient treatment is recommended only to complete drug therapy after the disease has become mactive or reached the good chronic stage

Bed Rest Strict bed rest is employed only for patients with symptoms or those not responding to therapy Following this period (usually from two to three months) modified bed rest is employed with gradually increasing activity until discharge

Specific Therapy Specific treatment has been analyzed in tables 5 through 8 It must be borne in mind that the treatment here presented represents for the most part that used in 1951 and 1952 because the patients treated then were discharged in 1953 Changes in therapy which have occurred since 1952 will be discussed later Table 5 presents the general types of therapy employed in patients discharged as inactive in 1959 and 1953 Only one patient with active tuberculosis was placed on bed rest only in 1953 because he was hypersensitive to the drugs used

active tube culosis by twhe of hattent and disposition, 1952 and 1953

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Drugs The drugs usually used were one or two grams of streptomycin (SVI) every three days, combined with 300 mg of isoniazid (INH) daily, or 12 grams of para aminosalicylic acid (PAS) daily Two hundred and twenty five patients were treated with rest and drugs to the inactive stage. This includes 148 patients with pulmonary disease (table 5) and 77 patients with pleural effusion or other forms of tuberculosis. Ten who received drugs up to four months, had reactions severe enough to warrant discontinuance of the drugs. Sixty three patients received chemotherapy for from four to eight months, 102 patients, for from eight to 12 months, 44 patients, for from 12 to 18 months, and six patients, for 18 months or more When these patients were treated (1952), drug therapy for from six to eight months was considered adequate. This duration has gradually lengthened and chemotherapy for one year is believed the minimum duration for patients who have responded well (see discussion)

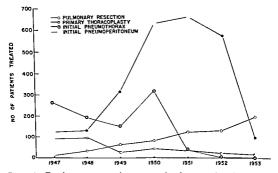


Figure 1 T ends n treatment of patients with pulmonary tuberculosis About the same rumbe of patients were treated each year

Temporary Collapse and Surgery The changing nature of the therapy in tuberculosis has been emphasized above Pneumothorax was completely abandoned by 19-2 partly because of the $h_{\rm th}$ rate of complications and partly because good results have been obtained by other less prolonged more successful methods of therapy Pneumoperitoneum had a brief period of popularity but it is also on the decline because of the clinical impression that it has contributed little to the better results which are being obtained

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TABLE 7 Distribution of patients with active tuberculosis by result of treatment 1952 and 1953

		Veteran	ran			Civilian dependent	pendent	
Result	51	1952	1953	62	1952	2.	1953	
	Number	Number Percent	Number Percent		Number Percent	Percent	Number Percent	Percent
Successful (inactive stage)	81	26 5	89	34.4	7.7	9 19	100	74 6
Unsuccessful	225	83 5	170	9 59	48	38 4	34	25 1
Good chronic	18	5.8	77	8 5	9,	48	ν.	37
Destina Irregular discharges	179	586	127	49.0	40	32.0	26	19 4
Total	306	100 0	259	100 0	125	100 0	134	100 0

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Primary thoracoplasty still finds a limited place in the treatment of patients with far advanced cavitary disease but in the main has largely been replaced by resection of the diseased lung tissue. The increase in resectional surgery and the abandonment of temporary collapse procedures is well depicted (fig. 1).

Table 6 illustrates the different operations performed on patients discharged in 1953

Success of Therapy (table 7) By successful therapy we mean treatment of patients to the inactive stage (NTA Standards), that is sputum negative, cavities closed, and unchanging roentgeno grams for at least six months. These patients should have the best chance of staying well without relapse Patients discharged as "good chronics" (i e, with open cavities and/or positive sputum, but roentgenogram stability) were classified as unsuc cessful results as were deaths It was doubtful that deaths from nontuberculous conditions should be so classified, however, all deaths have been analyzed separately (table 8) We believed that irregular discharges should be considered as treatment failures because the relapse rate in these patients presumably will be high Only those military patients who would probably reach the mactive stage were kept at this hospital. The results in this group as expected, were excellent and not evaluated here One hundred and five military patients were returned to active duty in 1953

Results obtained in the veteran group of patients (a difficult problem from the viewpoint of extent of disease and of patient co-operation) and in the civilian dependent group are compared in table 7. The number of patients discharged as inactive in the veteran group is appallingly low as compared with the civilian dependent group. In both groups the irregular discharges represented a major problem, of 204 "treatment failures," 153 were due to irregular discharges. Of the veteran group one half left the hospital against medical advice as compared with one fifth of the civilian dependents. A hopeful sign in the veteran group is that the results in 1953 were better than those in 1952.

Deaths (table 8) Two operative deaths occurred in 1953, giving a surgical mortality of one percent for 212 procedures. One of the two, a patient whose pulmonary function was border line for the operation, died of pulmonary insufficiency and the other patient died of repeated massive hemorrhage following segmental resection. The source of bleeding was unexplained at necropsy. A lobectomy was unsuccessful in stopping the hemorrhage.

Of the nonsurgical deaths, eight were due to causes other than tuberculosis It is noteworthy that in 1953 there were no deaths from tuberculous meningius. There was a decrease in

deaths from progressive or pneumonic tuberculosis. Some patients at death had only recently started treatment or had drug resistant organisms. Twelve of the 17 died due to pulmonary insufficiency and cor pulmonale or massive hemorthage. They represented for the most part the end stages of tuberculosis with cavitary and fibrotic disease but with very little disease activity. In these patients the complications of tuberculosis rather than progressive disease was the main cause of death.

DISCUSSION

As shown by the data presented the basis of the prosent day therapy for tuberculosis consists of rest chemotherapy and excisional surgery At present strict bed rest is usually maintained (from two to three months) until the acute exudative phase has cleared and symptoms have largely disappeared Modified bed rest is then continued until an inactive state is reached.

At present chemotherapy (streptomycin isoniazid streptomycin para aminosalicylic acid isoniazid para aminosalicylic acid is begun as soon as diagnostic studies are completed and is given throughout the entire hospitalization for a total of at least 12 months. The average duration of chemotherapy is now nearer 18 months for all patients many patients with far advanced disease and all good chronics are continued indefinitely on drugs.

Resection is considered after adequate drug therapy (usually from six to sight months) on the basis of the following indications persistent cavitary disease continued positive sputum and significant caseous residuals. During chemotherapy concentrated sputum smears in addition to cultures are necessary to detect positive bacteriology because of the inhibitory effects of the drugs used on culture growth All indications are of course relative and depend on the disease picture as a whole

We believe that the immediate over all results of therapy are very encouraging with the present method of management Because most patients are on drug therapy until discharge however relapse is not to be anticipated until a considerable time after discharge

It is gratifying to note the excellent results obtained in treatment of the military personnel and their dependents. This probably reflects the co-operation obtainable from these two groups in the first instance by military discipline and in the second as a result of their understanding of tuberculosis problems. The consistently poor results obtained in un co-operative patients in all groups appears to us to be an added argument for more stringent compulsory confinement laws with adequate enforcement as one of the key stones of tuberculosis control

Irregular discharges have decreased during the past year This probably represents patient recognition of the advantages of medical treatment and the dangers of not accepting or discontinuing treatment. To patients as well as physicians, improvement is much more dramatic with chemotherapy and bed rest than with bed rest alone. The veteran patients continue to be a serious problem.

Disposition of Military Patients Because of the chronic relapsing nature of tuberculosis, the Army has in the past been reluctant to retain patients with tuberculosis for treatment, but has preferred to transfer such patients to the Veterans Administration. The major factors for this decision was the prolonged loss of service time, the high cost of hospitalization, the tendency to relapse in spite of therapy, and the necessity for reduced physical activity long after hospitalization. For this reason only a few career personnel with critical military occupational specialties were treated in the past and all others were retired from service.

Present-day changes in treatment have now modified some of the former objections to treatment in military service Hospitali zation has been shortened and in the future may be further shortened with chemotherapy continued on an outpatient program Relapses are now much lower in number, and more arduous physical exercise can be begun earlier than previously Al though the cost of treatment is still high, it must be balanced against the same relative cost in Veterans Administration hos pitals One major advantage of treatment in military service is the fact that disciplicary power is available when necessary to ensure completion of such treatment. Outside of the armed serv ices the results of this lack are demonstrated by the high irreg ular discharge rate of those patients retired to the Veterans Administration 5 The patients who leave the hospital with active disease are financial liabilities to the country as a whole The added cost of future rehospitalization and pensions for these persons will be very high

The present policy is to temporarily retire all noncareer, short-term (two-year draftee) and nonessential military personnel to the Veterans Administration as soon as a definite diagnosis of tuberculosis is established Career personnel with disease so severe that a return to duty is not to be expected within 18 months are similarly retired Patients who had disease present before entry into service which was not aggravated by service are separated from the service with the disease recorded as "line of duty no". The great majority of retirements are on a temporary basis and such persons are re evaluated for active duty in from 12 to 18 months following discharge. If the disease remains in

active a return to duty is then recommended Repeated evaluations are performed Permanent retirement is granted only to hopelessly diseased persons with little chance for recovery

SUMMARY

An analysis of the patients discharged from the tuberculosis service of this hospital in 1953 indicates that due to advances in therapy career members of the armed services who have active pulmonary tuberculosis have better chances than ever for return to full military duty. One fundred and five such patients were returned to duty in 1953

Two hundred and seven of 1 358 patients (15 2 percent) ad mitted for possible tuberculosis were found not to have tubercu losis Seventy two patients (5 3 percent) were considered to have inactive tuberculosis on admission Of 1 079 patients with active tuberculosis 87 7 percent had pulmonary involvement nine per cent had pleural effusion only and 3 3 percent had extrathoracic disease. Of the patients with active pulmonary tuberculosis 20 3 percent had minimal disease 49 5 percent had moderately advanced disease and 30 2 percent had far advanced disease

Present therapeutic trends include drugs given over a longer period of time increased use of pulmonary resection limited use of thoracoplasty and virtual abandonment of temporary collapse procedures Irregular discharges of un co operative patients represent one of the most serious unsolved problems of tuber culosis This is especially true of the veteran population Ex cellent immediate therapeutic results have been obtained in both military patients and their dependents

Administrative problems associated with military patients are complex in nature and the rationale for handling these patients is based on the extent of the disease and whether or not the patient is a career soldier

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CHYLOTHORAX DUE TO SPONTANEOUS RUPTURE OF THE THORACIC DUCT

MARION L CONNERLEY Commander (MC) USN GEORGE G ZORN Lieutenant (MC) USN

CHYLOTHORAX, first described by Longelot in 1663, is a comparatively uncommon condition. About 150 cases have been reported in the literature 2. Of even greater rarity is the true spontaneous rupture of the thoracic duct

TRAUMATIC CHYLOTHORAX

As the name implies, traumatic chylothorax is produced by injuries such as blows on the chest, penetrating wounds, crush ing injuries, and hyperextension of the spine. It has been known to occur in the newborn infant when attempts at resuscitation have been too vigorous or from hyperextension during delivery. Included in this group also are chylothoraxes due to injuries to the thoracic duct during surgery. Smithwick remarked that he had injured the thoracic duct 15 or 20 times during sympa theorems for hypertension. The thoracic duct is injured quite frequently during excision of lymph nodes and other masses from the left side of the neck.

Many of the chest injuries which could produce a chylothorax result in the death of the patient before the condition can become manifest. This of course is because of the close proximity of the duct to vital structures however, chylothorax can also occur after relatively trivial trauma. Meade and associates? called at tention to the elasticity and free mobility of the normal thoracic duct. They believed that in most of these injuries the duct must first be bound down or invaded by some disease process before hyperoxtension or other slight trauma can produce a chylothorax.

Cases of traumatic chylothorax have been summarized by Meade and associates 'Shackelford and Fisher,' Lampson,' and Baldridge and Lewis 10

ATRAU (ATIC CHYLOTHORAY

Atraumatic chylothorax is usually due to malignant neoplasms, tuberculosis, filariasis, or thrombosis secondarily affecting the

From USN ! H spt ! San D go Calif Dr C nnerly is now at 3762 LaCre ta Dr e Sa D g C l f

thoracic duct Yater2 in 1935 found less than 100 cases in the world literature of which 31 were due to neoplasms such as carcinoma lymphosarcoma, and Hodgkin s disease Ten cases were due to tuberculosis and 13 had other causes (thrombosis of the upper great veins polyserositis atherosclerosis of the thoracic duct filariasis perforating lymphangitis, and diaphrag matic hernia)

In discussing atraumatic chylothorax it is interesting to note that the obstruction of the duct alone 1 not enough to produce a chylous effusion Lee' in 1922 ligated the thoracic duct in cats and showed that chylothorax did not develop In time col lateral lymph channels were formed in these animals Blalock and associates 2 on the other hand succeeded in producing a chylous effusion in cats and dogs by ligation of the superior vens cava One half of his animals developed a chylothorax and some developed a chylopericardium

That a tumor mass or inflammatory process does not cause a rupture of the thoracic duct by occlusion alone is substantiated by later and Washburn The former author reported 24 cases of duct obstruction in which only three exhibited a chylous ef fusion Washburn had 12 such cases, in which only one developed a chylothorax Instead the disease process most likely causes a necrosis or suppuration of the duct wall through which per foration can occur Because the duct is retropleural chyle is bottled up" and ruptures into the pleural cavity some time later Thus especially in atraumatic chylothorax there is usually a latent period before chyle appears in the pleural cavity

HISTORY OF TREATMENT

Not many years ago all patients with chylothorax were treated conservatively with symptomatic and supportative measures Be cause most of these patients died from protein and fat depletion an attempt was made to infuse aspirated chyle This was first attempted by Oeken in 1908 with a fatal result however Bauersfeld in 1937 successfully returned chyle to a patient intravenously Little and associates reported a case in which over a six month period 22 485 cc of chyle was infused to a patient without mishap But in 1949 a patient treated by Whitcomb and Scoville died unexpectedly during a chylous infusion

Several theories have been advanced for the cause of death during this procedure. These last authors believed their patient died in anaphylactic shock. It would seem unusual that anyone could exhibit an anaphylactic response to his own secretions Perhaps foreign protein is responsible for the sensitization Still again the size of the fat clobules may play a part by forming a fat embolism

In 1903, Deanesly's advocated implantation of the severed thoracic duct into a nearby large vein, and succeeded in placing the proximal end of the injured duct into the internal jugular vein in the neck. In 1916, Harrison's implanted the cut end of the duct into the external jugular vein.

Prior to 1946, when the first successful ligation of the thoracic duct in the chest was done by Lampson, chylothorax resulted in a mortality rate of over 50 percent in fact, Cushing remarked that the thoracic duct lay in a surgically forbidden territory. In 1934 hater said, "Ligation in the chest is almost certainly fatal." As late as 1945 Florer and Ochsner wrote, "Direct surgery to repair the duct has been completely unsuccessful, resulting in 100 percent operative mortality." In 1948 Hodge and Bridges advised the implantation of the duct into the azygos vein for fear simple ligation night produce increased intraductal pressure and rupture. In the past few years, however, ligation of the injured thoracic duct has been performed many times with out complication.

Other therapeutic measures have been attempted in this condition but need only be mentioned here. These include pneumothorax, phrenic crush, and instillations of broths or chloroazodin (azochloramid). These procedures supposedly close the leaking duct by pressure.

The management of chylothorax was excellently described by Merde and associates 'Protein loss should be replaced by a high protein diet and by intravenous infusions of amino acids, serum albumin, and whole blood Because of the danger of hepatitis, plasma is usually avoided as a means of protein replacement. Meade reported such a complication

If repeated aspirations of the chyle are performed, about 50 percent of the patients will recover on that regimen alone Should the amount of chyle fail to decrease, then closed drainings, with or without suction, may be instituted if the patient still does not respond favorably, a thoracotomy with ligation of the thoracic duct should be performed it is unwise to use closed suction for more than two weeks, as the lung then becomes encapsulated, necessithing a decortication

Danger of infection from repeated aspirations is minimal Chyle in itself is bacteriostatic, and has never been known to become infected

CASE REPORT

A 17-year old youth was admitted to this horpital on 29 Au gust 1951 with a diagnosis of pulmonary edema, cause unknown

His chief complaints were swelling of both ankles and of the face shortness of breath and mild cough He stated that he had been well until one month prior to admission when he noticed gradual and progressive swelling of his ankles. Two weeks later his face became edematous About this same time shortness of breath particularly on exertion and a mild nonproductive cough became manifest All had become more severe On the day of admission he noticed scrotal edema for the first time

His past history revealed that he had been a student had worked in a grocery store and then had entered the Navy in February 1951 He had not been out of the continental United States He smoked less than a package of cigarettes per day and rarely drank His family history was negative for tubercu losis diabetes cardiovascular disease and carcinoma He had the usual childhood diseases including whooping cough There had been no significant adult illnesses and his only surgical operation was a tonsillectomy His only injury was a simple fracture of a metacarpal several years earlier No history of recent trauma could be obtained. He denied venereal infection

Systemic review revealed that he had gained 10 to 15 pounds in the month preceding admission to this hospital For two weeks prior to admission he had noticed increased urinary frequency (five times a day) and nocturia (one to three times a night)

Physical examination showed a well-developed and well nourished young man in no apparent distress. His height was 5 feet 7 inches and weight was 155 pounds. His usual weight had been 140 pounds Temperature was 99 F pulse 80 respira tions 22 and blood pressure 118/84 There was mild periorbital edema otherwise the eyes ears nose throat and neck were negative Inspection of the thorax revealed a las of the left chest on deep inspiration. There was absent tactile fremitus flatness to percussion and absent breath sounds below the second inter space of the left chest The heart and mediastinum were shifted slightly to the right and heart sounds were distant The abdomen was somewhat rounded and soft. The liver edge was palpable two fingerbreadths below the costal margin. It was smooth and nontender The spleen and kidneys were not palpable There were no abdominal masses tenderness or rigidity. There was some duliness to percussion in the flanks with suggestive shift ing dullness Bowel sounds were normal. The genitalia were normal except for slight scrotal edema Two plus pitting edema of the ankles was present \eurologic and rectal examinations were negative The clinical impression was anasarca and pleural effusion due probably to nephritis

Laboratory studies were as follows Repeat urinalyses were within normal limits Specific gravities varied from 1 018 to 1024 Sugar and albumin were negative Microscopics revealed a few amorphous phosphates but were negative for red and white blood cells and for casts The hahn test was negative The red blood cell count was 4,900,000, hemoglobin, 14 grams per 100 cc, white blood cell count, 7,800 with 88 segmented neutrophils, 10 lymphocytes, and 2 monocytes Hematocrit was 44 Sedimenta tation rates varied from 7 to 23 mm/hr On the day after admission the total protein was 3 6 grams per 100 cc Without receiving parenteral proteins, and while on a simple low salt diet, the protein was reported on 10 September 1951 to be 572 grams (albumin, 4 grams, globulin, 17 grams) Chloride (as sodium chloride) was 460 mg, nonprotein nitrogen, 36 mg, and creatinne, 32 mg per 100 cc The phenolsulfonphthalein test and electrocardiographic findings were normal

Roentgenograms of the chest revealed a pleural effusion on the left to the level of the second rib anteriorly

When laboratory studies failed to substantiate the diagnosis of nephritis, tuberculosis was considered as the possible cause Skin tests were done with these results histoplasmin and cocci dioidin were negative in dilutions up to 1 100, old tuberculin gave a hypersensitive reaction at 1 100, but was negative in greater dilutions

On 18 September 1951, a left thoracentesis was performed, and 1 600 cc of white chyle was aspirated On 25 September a second thoracentesis vielded 500 cc more Treatment at this time was purely symptomatic During the following week repeat roentgenograms (fig 1) and blood chemistry studies were done Respiratory function tests revealed that the vital capacity was 2,065 cc and the air velocity index was 0.88

The fluid in the left chest rapidly reformed, necessitating repeat thoracenteses with removal of 2 700 cc and 2,750 cc of chyle on respective occasions. The patient was given two units of serum albumin following each of these taps. On 9 October 1951 his total protein was 618 (albumin, 48 grams globulin, 13 grams)

On 11 October a left thoracotomy was performed After opening the pleural cavity an estimated 4,000 cc of chyle was removed by suction from the left hemithoray. The lung was covered with a filmy fibrinous peel which was wiped away. The mediastinum was opened and the esophagus was mobilized. The thoracic duct was identified lying between the aorta and azygos vein A transverse tear in the lower third of the duct completely divided it, but there was no evidence whatsoever of neoplastic or inflammatory disease to explain the chlous effusion A portion of the duct was excised and forwarded to the laboratory, where



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microscopic examination revealed a normal thoracic duct. The distal end of the duct was dissected free and lingated Several proximal branches were isolated. These too were leaking chyle and were ligated. The mediastinum was closed loosely a No °4 Foley catheter was inserted into the left chest and connected to underwater suction and the chest was closed.

The postoperative course was entirely uneventful The thora cotomy tube was removed on the third day Roentgenograms show ed complete re expansion of the left lung There was no evidence of fluid and only minimal postoperative pleuritis The mediasti num was in the midline The diaphragm was normal in position and the cardiac shadow was normal.

The patient's convalescence was so remarkable that he went home on convalescent leave 13 days after operation. At the ex-

piration of a 30-day period he was again examined and evaluated He stated that he was completely examptomatic while at home, and that he did not find it necessary to restrict his physical activities A roentgenogram (fig 2), blood studies, and respiratory function tests were all within normal limits Physical examination was negative. He was returned to full duty on 7 December 1951

In February 1952 the patient was readmitted to the hospital because of ankle edema and dyspine on evertion Physical examination was negative except for slight ankle edema Roentgenograms of the chest and respiratory function tests were nor mal Laboratory studies, including a complete blood cell count, urinalyses, Kahn, nonprotein nitrogen, total protein, albumin globulin ratio and renal function tests, were all within normal



F gu e 2 Roentgenogram seven ueek afte operation showing a relatively normal postope at ie cond t on of the chest

limits Within five days the patient became completely asymptomatic on bed rest and symptomatic treatment. His ankle edema did not recur even after trials of prolonged standing. He remained symptom free and was discharged on his thirty ninth hospital day

The patient's condition is still being followed. He has been performing his duties at sea without difficulty. Periodic roent genograms of the chest have been negative and he believes that his physical endurance is above average

SUMMARY

A patient with spontaneous rupture of the thoracic duct was treated successfully by ligation of the duct We were unable to find an explanation for the ruptured thoracic duct in this patient In a recent article Meade presented five cases of spontaneous chylothorax however he was able to show that four of his pa tients had recent hyperextension injuries of the back and in each of the five cases presented there was evidence that the duct could have become fixed as a result of congenital anomaly trauma or infection Careful interrogation and examination of our patient revealed nothing to suggest a fixed duct and at operation it was not found to be adherent to neighboring struc tures

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THE PHYSICAL EXAMINATION (1863-1954)

The duties which devolve upon the examining surgeon are both delicate in their nature and of difficult performance. Intrusted with the responsibility of deciding some of the most perplexing questions in medical science upon only a few moments reflection he cannot approach the discharge of his office without feeling how essentially important to the right understanding of every case are the smallest apparent details of which it is made up. The causes of disease the catenation of symptoms their usual and ordinary progress the results now present and visible, now unseen and latent, which they have produced in the human system-age temperament and occupation-all these are data which must be weighed and considered in every in stance before he can correctly form an opinion when in addition to the incertifude of natural phenomena the accidents of fraud by simu lation or concealment errer into the problem, it is not difficult to see that with all the skill possible, and all the readiness of obser vation employed cases of deception will at times escape detection

⁻JOHN ORDROVAUX M D Manual of Instructions for Mil tary Surgeons D Van Nostrand New York N Y

TABLE 2 1 4	TABIF 2 1 1 1 1 1 de 16 U 1 d'St	-	
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most of the patients Because the swabs were taken throughout the day, many of the children were examined during the afternoon and many of them had been bathed before the examination

TABLE 3 Incidence of Enterobius vermicularis infection at
Westove Air Force Base Mass

Aggoup (ya)	Numbe f pt ts examin d	Numbe of poste meats	In d nce (p cent)
Und 1	11	1	9 1
1 to 2	43	8	18 6
2 to 3	79	16	20 2
3 to 4	54	14	25 9
4 to 5	54	21	38 8
5 to 6	73	26	35 6
6 to 7	63	20	30 7
7 t 8	55	30	54 5
8 t 9	26	10	38 4
9 to 10	22	6	27 2
10 to 11	18	3	16 6
11 t 12	7	4	57 1
tal	505	159	31 6

RESULTS

In our study of 505 children of both sexes between the ages of six months to 12 years, we found that 31 6 percent lad enterophasis (table 3) Because the incidence of pinworm infestation is relatively rare under the age of one year, we did not examine this age group unless an older sibling was found to be affected. The oldest age group examined was the group of eleven year olds. Although an incidence of 57 1 percent (four of seven children) was found among these patients, we believe that no conclusions can be drawn because of the small number of patients in this group. The years of most frequent occurrence were between four and eight. In this series the peak was in the seven year old age group with 54 5 percent of these children having enterobiasis. It must be stressed that because we used only a single perianal swab for diagnosis of each one of most of our patients, and because many of the swabs were taken in the afternoon after the children had been bathed, the total which we recorded was probably lower and may not have necessarily indicated the actual incidence of E vermicularis infestations. Sawitz and his co-

worlers found that the first examination revealed only 70 percent of the cases in their series

DISCUSSION

Enteroblasis is a cosmopolitan disease thriving on host populations the vorid over it is not confined to the poorer economic groups alone it is found in all levels of society and no group has been found to be completely exempt from pinworm infestation.

The only way in which enterobiasis can be adequately diag mosed is by the microscopic examination of a perinal swab for oa Clinical diagnosis is inaccurate because only 25 percent of the patients have any symptoms. The ideal time to make an examination is in the morning shortly after the patient awaken. At this time the eggs are more apt to be present in the perinal area and will not be lost as a result of bathin, defecation or scratching.

The formule pinnorm discharges from 10 000 to 25 000 eggs on the skin near the annus Each one of the eggs is capable of sur viving for a long period under favorable conditions of sufficient moisture and coolness Eggs though quite resistant will succumb to dryness and elevated temperatures

Priterobiasis should be considered a family disease. Nolan and Reardon studied dust samples from homes of patients with heavy pinworn infestations and found the ova in 91 7 percent of the dust specimens collected. If one member of a family becomes infested the disease may spread to other members. Living in congested crowded querters with limited plumbin, facilities further increases the lifelihood of transmission.

It is innortant for all physicians in the armed services to be aware of the pinworm problem Frequent perianal smears should be performed on all persons living on military installations in order to diagnose and treat all cases of enterobiasis. It is important to instruct the patient as to the nature of the pinworm and the hygienic neasures for preventing its recurrence. Active programs for diagnosis should be carried out by medical officers on a world wide scale. In particular personnel who are leaving areas with a high infestation rate should be checked to ensure that they are not transporting the pinworm to a new area. The rate of enterobiasis can be lowered considerably under such a program.

SUMMARY

Enteroblasis is prevalent throughout the world /t this hos pital examination of 505 children between the ages of one to 12 years by means of cellulose tape svabs revealed that 31 6 per cent of the children had enterobiasis. All medical officers should be aware of the pinworm problem, and efforts should be made to diagnose the infestation so that treatment and prevention can be carried out

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THE PRINTED WORD

Modern med cine or at lea t modern physiology may be s id to have started with Wilsam Harvey O ickly there followed Boyle the chemist Boerha ve the geat bedside teach r the on fur t to bring pat ent nd theory together and his Swiss pupil Albrech von Halle who e El ments of th Phys ol gy of the Human Body (1759 1766) 1 till q or d But now we are in the stream of books medical books books on history books of literary value some of which we like to read Undoubtedly many manuscripts and learned treatises dropped to the bott m of the stream some to be hooked by patient fishermen in years t come but most to be buried in what is known to geologists as primeval sludge And most were pe haps no better than the ludge itself Fortun tely today there is still sludge and not every book publ shed can escape it M ny books and articles written should ne er have left the qui ering pen of inadequately prepared authors whos knowledge has been meage but whose enthusia m has been boundless Indiscr minate writing is surely worse than no writing at all

> -WALTER W BOYD M D Ad IA nal fth Dtt fCImb p 169 M 1954

CEREBRAL ATROPHY DUE TO ALCOHOLISM IN YOUNG ADULTS

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GILBERT SNYDER B S

IN EVALUATION of military patients with more than one en listment who gave a history of intermittent or periodic heavy drinking and the gradual accumulation of a record of in creasingly serious disciplinary offenses, we became interested in studying the problem of chronic alcoholism and brain damage from the standpoint of a team approach. This article presents findings in seven patients elicited by neurologic, psychiatric, and psychologic technics.

The literature reveals many studies concerned with the path ologic and physiologic effects of alcohol on the central nervous system. In studies on autopsy material, Moore, Umiker, and Alexander found edema hyperemia and petechial hemorrhages in patients dying of acute alcoholism. Writing on the findings in chronic alcoholism Alexander, Lichtenstein, Boyd, and Steven son's described the presence of diffuse, generalized cortical atrophy in the gross specimens. Microscopic findings are present in the cortical or striatal areas of the brain in some cases, and in others the cerebellum, medulla, and midbrain may be in volved? *-* The main features are atrophy and loss of cells perivascular edema, increase in astrocytes, swelling and fragmentation of myelin and vascular changes including petechial hemorrhages.

From a roentgenographic point of view it is a well accepted fact that atrophy of the brain when present beyond a certain degree is demonstrable by pneumoencephalography 10-12 There is a wide range in the individual variations in the normal making evaluation in marginal cases difficult and necessitating a well trained and experienced roentgenologist.

In a study relating pneumoencephalographic and electroen cephalographic findings, Levin and Greenblatt¹³ found that 36 of 67 patients with cortical atrophy and/or ventricular dilatation showed abnormal wave patterns Twentv one of the 36 were with out a history of convulsions and of these 17 showed slow wave

abnormalities Hines and associates reported abnormal electroencephalograms in four patients with cortical attrophy and in three of nine patients with chronic alcoholism Rubin demon strated abnormal electroencephalograms in nine patients with schizophrenis in whom cerebral atrophy was found in two of the nine delta wave activity was reported

Goodman and Gilman stated that alcohol causes an irregular ly descending depression of the central nervous system Depres sion of respiration does not occur until late in the course of marked alcoholic intoxication In a study of 34 patients with alcoholic hallucinosis Greenblatt and co-workers17 demonstrated that during the active phase of the disease six of 13 patients showed abnormal tracings whereas following recovery only one of 21 asymptomatic patients showed abnormal findings Davis and associates " in studies of the effects of alcohol upon the electroencephalogram found that relatively low blood al cohol concentrations resulted in a reduction in energy on the fast side of the frequency spectrum particularly in the range of 10 to 13 cycles per second At higher concentrations they found episodes of waves of four to eight cycles per second with an increase in energy in that band of frequencies Engel and others demonstrated the same effects with alcohol as well as with barbiturates anoxia and hyporlycemia Wyke Brazier and Finesinger demonstrated in the electroencephalogram a regional differentiation of response to barbiturate seda tion both as to onset in time and degree of change. In patients receiving larger doses per kilogram of body weight slow wave activity of three to four cycles per second replaced the original response of slowing of alpha or of the high voltage oo to 30 cycles per second activity

Schwab pointed out that short bursts of delta wave activity may be associated with a slowing of mental processes so slight that experimental methods are necessary to discover it Hoch and hubis found that in organic psychoses mental impairment was usually demonstrable when delta waves were present

The reports of psychologic studies of chronic alcoholics in dicate that the prolonged habitual use of intoxicating beverages results in impairment of intellectual functioning Wechsler found that the digit-span and digit-symbol subtests indicated major impairment Impaired intellectual functioning was found before there was any clinical evidence of brain pathology. A positive relationship between the intensity of the impairment and chronicity of the alcoholism was indicated klebanoff and others in a rocent survey of the literature pertaining to the psychologic consequences of brain lesions and ablations state that results of certain Wechsler Bellevue subtests appear to be particularly affected by brain injury. The digit-symbol and digit-

span subtests are among these Morrow and Mark^{27 28} in their studies on organic brain pathology also found impairment could be revealed by the digit-span and digit-symbol subtests

THE STUDY AND ITS FINDINGS

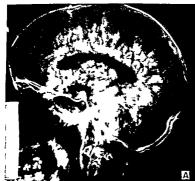
This study deals with seven enlisted men on active duty, each of whom during their military careers reached one of the top three enlisted pay grades. They ranged from 25 to 38 years of age, with a mean age of 32 years and had been using alcoholic beverages for from seven to 17 years, with a mean of 11 years. Each man indicated a relatively recent intolerance to intoxicating beverages. With the exception of one patient who was admitted with questionable epilepsy, each was admitted to this hospital because of his inability to perform adequately the duties of his rate. All were admitted to the neuropsychiatric service and subjected to physical, psychiatric, neurologic, and psychologic examinations.

The physical examinations of all patients were within normal limits Six had normal neurologic findings, the seventh showed slight ataxia as determined by gait finger to-innger, and finger to-nose testing Psychiatric examination revealed the patients to be oriented as to time, place, and person. There was no evidence of hallucinations or delusions. Sensorium was not grossly disturbed, however, each experienced some difficulty in recall, i.e. such things as anamnestic data and test material. There was no evidence of thinking disturbances. As a group, they were slightly dull with apathetic affect, and showed a slight depression of mood in terms of concern over the cause of their difficulties.

The electroencephalographic patterns of all patients were abnormal Six records revealed symmetrical slow waves, three to four per second located in the frontal areas. In addition, three of these revealed the same type of waves in the parieto-occipital areas. The seventh record was considered borderline, consisting of low voltage alpha waves with occasional bursts of slow waves in the frontal regions.

Pneumoencephalographic findings in six of the seven revealed moderate, diffuse, bilateral cortical atrophy in the parietal region. The atrophy in one of the patients is illustrated in figure 1 Frontal atrophy was found in four of these six patients. The seventh showed mild diffuse generalized atrophy. Three of the seven revealed ventricular enlargement as well. In all cases, the parietal involvement was most marked.

The psychologic study used seven, rather than 11, subtests of the Wechsler Bellevue Intelligence Scale, Form I Selection was determined in reference to Wechsler's earlier study²⁴ and was





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designed to decrease fatigue during testing. The results (table 1) yielded the following mean subtest scores for seven subjects Information, 104, comprehension, 111, digit span, 74, similarities, 96, vocabulary, 114, block design, 93, and digit symbol, 77 The mean of these scores is 9 6 and one standard deviation is equal to 14 The subtest scores that differed sig nificantly from the mean and hence revealed a relative degree of impairment were digit span (74) and digit symbol (77) Ac cording to Wechsler29 the former is related to a disturbance of memory span and may be associated with attention defects and lack of ability in maintaining concentrated effort. The latter score may be the result of decreased motor co ordination or dif ficulty in concentration. To state the exact nature of the apparent psychologic deficiency is beyond the scope of this small study Six of the records were consistent and revealed the above deficiencies The seventh indicated no impairment on psycholog ic examination The electroencephalogram of this patient was noted above as being borderline

DISCUSSION

A review of the histories of the seven patients failed to re veal any evidence of congenital abnormality, significant trauma, infection such as encephalitis, or exposure to toxic agents such as carbon monoxide. The age group ruled out such conditions as Alzheimer's sclerosis or senile changes. There was no evidence of arteriosclerosis and no clinical signs of Picks disease, the ages of the patients tended to rule out such conditions any way. The only common denominator in these cases was the his tory of excessive intake of intoxicating beverages over a period of many years.

Vogt and Vogt' brought out the theory of pathoclisis based on the concept of so-called topistic units. They believed that topistic units may be said to be structurally, functionally and developmentally characteristic parts of the brain as for example the various nuclei layers or areas of the cerebral cortex. Diseases confined in their distribution to such units are termed topistic, and the tendency of the topistic units to be affected selectively is referred to as pathoclisis. The central idea in the theory is that the smaller or greater structural differences which are to be found within the central nervous system are determined by and reflect functional differences. Differences in cellular function are considered to be responsible for differences in the cells' susceptibility to various noxious agents, many of which are unknown.

The available evidence supports the inference that during acute alcoholic intoxication there is edema which leads to hypoxia, also, intoxication produces direct toxic changes in the

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cells of the cortex with interference in the respiratory and metabolic processes These changes are largely reversible, but some damage is permanent and leads to a loss of cells and nerve fibers, primarily in parietal and frontal regions. In our patients (who are all military personnel) the episodes of intoxication must have occurred periodically Because all of the men had been on active duty for many years, adequate performance of their duty necessarily involved abstinence from alcoholic bev erages for prolonged periods of time. The effects of the periodic acute alcoholic intoxications led to gradual loss of cells with each intoxication. A point was finally reached at which such a cumulative loss of cells resulted in certain findings Clinically these patients began to show intolerance to alcohol (subjective feelings of intoxication being elicited by increasingly smaller amounts) and their consequent displays of disturbed judgment involved them in administrative difficulties. Tests such as the electroencephalogram and psychometrics revealed abnormal patterns, and the pneumoencephalogram revealed evidence of atrophy

It is generally accepted that chronic alcoholics as a group are difficult to handle under any regimen of psychotherapy We be lieve that atrophy such as we have demonstrated may be a rel evant factor

SUMMARY

Seven enlisted men with an average age of 32 years and a history of excessive intake of alcoholic beverages over a mean period of 11 years showed no gross pathologic findings on clini cal neurologic or psychiatric examination Nevertheless, the digit-span and digit-symbol subtests of the Wechsler Bellevue intelligence scale revealed significant impairment. Electroen cephalograms disclosed abnormal findings consisting of bilateral. high amplitude, slow waves (three to four per second) in the frontal regions and in some of the parieto-occipital areas as well Diffuse cortical and subcortical atrophy particularly in the parietal region was found on pneumoencephalography

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HEARING AND INDUSTRIAL NOISE

SAM C BOSTIC Capta n (NC) USN HERBERT | WORSHAM

INDUSTRY throughout the nation is rapidly recognizing noise as a major health problem. Increased emphasis is being placed on the protection of exposed workers and on the control of this hazard. In spite of extensive noise abstement programs, many industries are still faced with compensation claims. The Navy probably has more than its share of excessive noise level areas in connection with its activities.

Early in 1952 a program was inaugurated at this air station designed to conserve the hearing of personnel and to protect the Government from false claims from its inception this program has consisted of three major phases, each of which will be discussed briefly

SCIENTIFIC EVALUATION OF THE HAZARD

At the beginning of the program, over-all noise-level intensities were determined and, if sufficiently high to warrant octave band frequency analyses were made, the data being plotted on graphs in the usual manner Based on data published in the literature, 1-7 danger levels in the different frequency bands had been arbitrarily established pending more definite agreement by authorities on the subject. It is generally accepted that the human ear is more susceptible to noises in a frequency band of 2,300 4,800 cycles per second. In this band we considered noises in excess of 85 decibels as being potentially dangerous. In a band of 20 75 cycles per second, the value increased to 105 decibels. It was evident that over all intensity levels alone were of little value in determining potentially dangerous areas.

Frequency data were used as a basis for making recommenda tions for the control of noise at its source when indicated, and when the operation producin, the noise was of such nature that mechanical means can be applied. In some instances excellent attentuation was obtained by surrounding the noise producer with an enclosure constructed from sound-absorbing materials

PERSONAL PROTECTIVE EQUIPMENT

Many noises cannot be controlled at their source and the cotrol of many others is not feasible. Some of the more important

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sources in this group are aircraft engines operating at high revolutions per minute on the field sandblasting steam clean ing metal spraying the heating of aircraft cylinders with large propane torches and the drying of parts with high pressure air streams Therefore it became necessary to furnish protective equipment. Personnel exposed to excessive noise intensities reported to the dispensary for an examination of their ear canals. At the time of the visit they were fitted with ear defenders and all personnel except sand blasters who must wear abrasive masks were fitted with protective helmets. The helmet used was an obsolete nylon aviator s helmet equipped with a protective ear covering—a chamois earphone cushion shaped like a doughnut. The hole in the chamois was first covered with an additional piece of chamois after which a dense sponge rubber plug was fitted and glued into the opening in the molded semirified rubber earnhone retainer

AUDIOMETRY

Suitable Testing Chamber At the beginning of the program audiograms were taken in the dispensary located in the industrial area The noise level which varied almost constantly ranged from 55 to 65 decibels with low frequencies predominating Most persons showed some hearing loss over the entire fre quency Loss in lower frequencies minimized the characteristic drop that occurs at 4 000 cycles per second when diminished hearing has been experienced as a result of extended exposure It became evident immediately that a more suitable location would have to be found if reliable audiograms were to be obtamed

Persons thoroughly familiar with the station prepared a list of locations they considered quiet. One by one these locations were eliminated Information that a walk in cold storage room installed in a brick building was available prompted its investiga-tion as a possible location. The outer walls of the room were of wood and the inner walls of metal the total thickness being six inches The nature of the insulation was not known The inside dimensions were 115 feet by 65 feet by 75 feet. After a rubber mat was placed on the deck to eliminate noise made by contact with the metal it was found that the noise level ranged from 26 to 30 decibels. This intensity was not exceeded when many multiengine aircraft were being turned up about one half mile away or when planes flew over at a low altitude Tho predominant frequencies in the storage room were below 600 cycles per second.

Many authorities have concluded that audiograms taken in noisy environments are of little or no value in determining hear in, losses. In some instances a level below 40 decibels has

been recommended, in others a level below 30 decibels 6-10 A comparison of audiograms (table 1) showing the apparent binaural hearing loss of a few of the persons tested in the two locations confirmed the conclusions reached by others Binaural losses were calculated by the Fowler Sabine method¹¹ which uses only frequencies of from 512 to 4,096 cycles per second

In the event a person showed a higher percentage loss on audiograms taken in the low intensity surroundings, it was considered that the progressive change had been more than was indicated by comparing the audiograms

TABLE 1 Decibel loss and percent of binawal loss at indicated frequencies (Sound pressure level in 1952 55 to 65 decibels in 1953 26 to 30 decibels)

Subject	Percent bina ral lo s			s at 512 cp eft a d ght	Decibel los at 4 000 cps Aver g left and right		
	1952	1953	1952	1953	1952	1953	
1	40	07	20	5	23	18	
2	3.5	06	20	2	18	13	
3	27	00	25	3	0	3	
4	98	47	28	5	38	38	
5	91	0.9	20	0	30	20	
6	19	0.0	20		3	0	
7	29	01	13	0	23	13	
8	28	0.0	20	5	13	8	

The loss of hearing caused by long exposure to excessive sound pressure levels is regarded as a slow progressive process. This activity was more interested in this progressive per manent hearing loss than in the temporary loss experienced for relatively short periods following exposure. If the progressive loss was to be evaluated with any degree of accuracy it was mandatory that suitable spaces for conducting audiometric tests be provided.

Table 2 shows the hearing characteristics, at the indicated frequencies and binaural hearing losses of employees subjected to three types of exposure No attempt was made to classify the subjects according to age groups or lengths of exposure The tabulated data was based on the last of a series of audiograms It can be seen that for any frequency a higher decibel loss was suffered by sandblasters than by those working at other occupations From such studies a more intelligent program of hearing conservation can be devised

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Testing Procedure After examination of the ear canals by a medical officer, employees exposed to dangerous noise intensities were evaluated for hearing level by means of a pure tone audiometer, the examination being repeated periodically Unfortunately, pre exposure audiograms had not been taken on these employees, some of whom have been working in noisy areas for many years

At the beginning of the program a policy was established which requires pre exposure audiograms on all employees who are to be assigned to danger areas In addition, each employee was supplied with ear defenders and a helmet. It was recommended that these employees have additional audiograms after six months exposure. If it was determined that a hearing loss, especially in a range of 4,000 cycles per second, had been experienced, another audiogram was obtained on the following Monday morning to determine if there had been recovery during the two days' absence from the noise If the loss persisted, it had to be considered that adequate protection had not been used or that the person was a poor risk for the environment. The latter had to be considered because wide individual susceptibility is generally recognized.

Audiograms were never taken on anyone who had been exposed to noise on the day of the test. In conducting periodic audiograms on large groups, five to eight were taken during the first hour of the working day

Hearing losses are experienced from causes other than noise, and hearing capacity usually diminishes with increased age. Before any conclusion can be reached it is necessary that adequate histories be tallen by qualified medical personnel and considered along with the audiograms.

SUMMARY

This article presents the experiences encountered in a hearing conservation program at a naval air station. A suitable auditometric testing chamber was set up and a comparison was made of binaural decibel loss in two different sound environments. The necessity of considering the environment in the testing of hearing is confirmed. The number of persons suffering hearing loss at various frequencies was found to vary with their occupation and proximity to the sources of noise. Forty one percent of a small group of sandblasters, for example, had a binaural loss of more than 10 percent.

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THE CAPTAIN OF THE MEN OF DEATH

With the wide use of a tibiotics the fulminating infections of the p st are becoming infrequent Indeed as opposed to a few y ars ago we hardly ever ee a case of lob r pneumonia in our I rge autopsy service This disappearance of infectio liseas and particul rly of pneumonia s a main cause of de th should n t le d us to infer that pneumonia and other infections are not still grave problems. The lives of most elderly people are terminated by infectio's especially pneumonia which complicate those diseases pertaining to the old er age groups. The pathologist at the autopsy table is too frequently concerned with the basic disease which the patient has and not s f ficiently concerned with the terminating illness. It should be realized that m ny patients with cardiovascular d sease diabetes mellitus or bronchiectas's could have lived months or years longer if it had not been for thei terminati a infection which often w s a pneumonia Osler some forty odd years ago characterized lobar p umonia as the Captain of the Men of Death Although the antibiotics have con quered lob r pneumonia I should still select pneumoni as we know it today as the Capta n of the Men of D ath since it is still the terminal event in many lives

> -DOUGLAS H SPRUNT N D So th Md II nal p 484 May 1954

PREVENTIVE MEDICINE IN THE ARMED SERVICES

MAJOR GENERAL DAN C OGLE Surgeon General U S Au Force

It is my pleasure to attend the opening of this course cover ing subjects and purposes of high importance. This is my first platform appearance since being reassigned to Wash ington as Surgeon General of the Air Force, and I can think of no more fitting occasion than this one where we are initiating better understanding in the multiple fields of preventive medicine

No phase of medical effort, whether it be in military or civilian medicine, contributes more to the stability and integrity of our profession's responsibility to humanity than does preventive medicine This is particularly true in military medicine because our nation's security and economy are so dependent on the physi cal and mental efficiency of our limited military manpower Lach of our armed services is being called on to provide more effec tive defense with fewer available men Fewer men must do more things man more guns and ships, fly more planes, produce and maintain more materiel and complicated instruments of warfare With 3 000,000 men in our military forces, a reduction of five points in the medical noneffective rate would save sufficient military manpower to man one war strength, fully supported in fantry division, about five medium bombardment wings, or the manpower equivalent of naval fire power Translated into terms of national economy and applied to military medicine such a reduction in noneffective rates would save enough money in one year to build and equip 30 beautiful 300 bed hospitals Additional savings from such a noneffective rate reduction would include costs incident to the care of the sick-disability payments. recruiting and training costs for replacements, and personal losses due to illness or injury

PREVENTION A UNIVERSAL MEASURE

The importance of preventive measures is not peculiar to the medical profession. In fact, I fear that medicine may actually lag behind industry and business in the development of preventive technics. Within these fields much attention is given the

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preventive maintenance of buildings and homes by the use of in spections paint frequent repairs and replacement of defective parts. Such is also true of machinery. We are all prevention minded in ofar as our private automobiles are concerned and a ramufacturer who pays insufficient attention to maintaining his complicated instruments of production will not make a profit. The concept of preventive measures is also affecting the economy of the nation. We observe this in agricultural and industrial production controls processes designed to prevent a sickness of our national economy which would result in a depression. We daily observe the ideological vultures who are admittedly standing by awaiting the development of symptoms of national weakness and decay.

THE RESPONSIBILITY OF ALL PHYSICIANS

Preventive medicine s importance and requirements are denied only by the uninformed Yet we see nany in the profession leav ing such responsibilities solely to military preventive medical officer or to the meager public health personnel of civilian communities No physician hould be absolved of his respon sibilities in preventive medicine and the good physician will practice preventive medicine even within the confines of a limited specialty. There is a tendency to sequester the public health or preventive medicine officer within a military staff and to turn the more knotty problems over to him without rendering him sufficient time and counsel to enable him to solve them The preventive aspects of prenatal care well baby clinics im munizations and periodic physical examinations throughout life are well accepted However we should go farther than this and inject the concept of preventive medicine into our everyday prac tice regardless of our particular pecialty. The military medical services have always taken the lead in preventive medicine and military successes secondary to this science are beyond our ready comprehension I need not review these many contribu tions nor the impact they have made on the picture of world history

ADDITIONAL ECONOMIC ADVANTAGES

In order to further illustrate the economic advantages of preventive medicine. I believe that we can reliably estimate that each fully developed case of rheumatic fever contracted in the service costs the armed services about \$90,000. Each case of tuberculosis or other chronic disabling infectious disease is surely as costly Consider that one physician working an entire year could prevent even one of these cases from becoming a drain on the public economy and you have an idea of the degree to which preventive medicine pays off. A more dramatic example can be found in the area of airplane accident prevention. If within the three services we could effect a one-percent reduction of accident costs we would save enough money to pay the yearly salaries and allowances of 370 majors in the Medical Corps

SCOPE OF PREVENTIVE MEDICINE

We tend to speak of public health and preventive medicine in terms of infectious processes I believe that we must also in clude industrial health, accident prevention, and the health and physiologic measures necessary to properly adapt people to their working environment and vice versa. This very course of study you are now entering is an outgrowth of the preventive medicine effort of environmental adaptation in aviation medicine security of our nation may very well depend on the success in cident to mutually adapting men and machines, or men and weapons, to a satisfactory degree of stability, safety, and ef ficiency in a bizarre environment characterized by speed, ac celeration, vacuum, heat, cold, radiation, blast, zero gravity, and time-stress factors-all of superlative degree Today's greatest bomber has over 10,000 times the power of the first plane built by the Wright brothers It will fly a thousand times higher and a hundred times faster than theirs did, and its range of flight, pay load, and military effectiveness have been infi nitely increased All this in 50 years! My sincere hope is that we in aviation medicine are keeping pace with engineering progress If I may project a hypothesis, let us consider that within the next 20 years or less we may create and man a machine that will go 10 times higher and 10 times faster than our most spectacular planes of today Then we will have indeed reached the era of space medicine, and our present concepts of preventive medi cine in the air will have to be reviewed accordingly

If all of us here today were specialized in the fields of preventive medicine, our first responsibility would be to recognize our trust No one group of medical men or engineers should or can become the legal custodians of man's health or wolfare. The responsibility of preventive medicine is with us all It is a branch of medicine with which all of us, both professional men and laymen, should be ever increasingly familiar. We depend on you who become better informed to help us in our mutual responsibilities to society I wish you the greatest success in this course. May its value be a real one that you can share after returning to your regularly assigned duties. You are committed to a great trust of medical and national economy

THE PASSIVE DEPENDENT VERSUS THE PASSIVE AGGRESSIVE PERSONALITY

JAMES R HODGE L 1 na 1 (MC) USNR

THE TERMS passive dependent personality and passive-aggressive personality are relatively new in the psychicaltric nomenclature. They are terms in frequent use today especially in the armed services and in the Veterans Administration but most descriptions are short summaries such as appear in the Joint Armed Forces Nomenclature and Method of Recording Psychiatric Conditions, and the Veterans Administration Technical Bulletin 10-A 78. These brief characterizations are of little value to the general physician who has not had the experience to form a definite picture of these personality types to the uninitiated the term passive-dependent ray seem condundant whereas the term passive-aggressive may seem condundant whereas the term passive-aggressive may seem contradictory. Actually these are very apt terms and each implies a characteristic clinical appearance and historical development. The character sketches drawn here are compositees of features found in varying degree and number among these patients

Both syndromes belong to what psychiatrists call personality disorders or character disorders. These terms imply a course of development from early childhood to the present time a logical progression of events from one point to another so that the current appearance is the result of a characteristic life history. The character disorder then has progressed and become fixed in a rigid structure over a period of years and represents an adapta tion of the person to his environment or a philosophy of life

THE PASSIVE DEPENDENT PERSONALITY

The passive dependent character is a boy in man's clothes. He is the child who never got away from his mother's apron strings in addition to being emotionally immature he is frequently immature physically but this is not always so Phenomenologically we see this type of person as folpless, indecisive and clinging to stronger figures—parent substitutes. He characteristically becomes anxiety ridden when faced with responsibility.

He is almost always extremely close to his parents and emotionally dependent upon them especially his mother. Having been

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overprotected by a supersolicitous mother, he would not consider making decisions without consulting her—or without consulting his father if he feels the need to mollify his dependency Leaving home, even for a short period of time, is about the most terrible experience imaginable for him, he never severs his close ties with home After he is married, if he ever is, and then only to a mother substitute who is usually several years older than he, he lives in the same town, same street, even the same house as his parents. He brings his marital squabbles home to Mamma's big bosom and embracing arms if he should inadvertently marry a womman who makes any extensive physical, social, sexual, or economic demands of him, he feels inadequate, occasionally defensive, and unable to cope with the situation Indeed, at such a time he may feel incapable of coping with life in general, and he characteristically seeks surcease in alcohol. As described by hinght, the typical alcoholic is a passive dependent character

When things seem really bad, the passive-dependent is likely to make a suicidal gesture. He may honestly feel at such a time that he wants to die, and he may accidentally even succeed in killing himself. The gesture, however, is typically a bid for sympathy and a return to the state of being taken care of, though it is frequently a reaction of hostility toward a parent or parentingure by whom he feels rejected. It is as if he were saying, "You'll be sorry when I'm dead and gone"

The life history of the passive-dependent person is typically benign and "happy" unless ovidence of separation anxiety is obtained He is usually a "good" baby and rarely a feeding problem until the time of weaning, which he may resist strongly He eats well, especially taking a great deal of milk. His general development is fairly normal, and he is described as a "good" or "happy" child He is very close physically and emotionally, to his parents who make a habit of overprotecting him flis early life is characterized by "Don't" and "Oh, my poor—" He may be a behavior problem until he accepts the passive response to "Don't," and comes running to Mommie with every minor physical and psychic bruise

Once he has accepted this passivity, his character is set for life and his goal is to maintain it. Later on, he may attempt to deny it consciously and go through a period of social rebellion or psychosomatic illness. This is usually determined by social pressure upon him to grow up" and "be like a man" But when the chips are down he reverts to a passive, frequently weeping self contered state in which he feels sorry for himself and wants others to do the same

His first noticeable period of anxiety may be when he starts school and is separated from his mother for the first time Ex treme forms of the dependency fostering mother are seen in the one who daily walks Johnny to school or the one who wishes to make him independent -- she follows along a block behind The e children do not do well in summer camps if they ever get there Being victims of smother love they become frightened and homesick They run crying home to Mommie at the slightest threatening gesture from their playmates. In the presence of Mommie and usually with her implied approval they usurn the tors of their playmates but they do not share their own When they are separated from home long enough as for example in school and can find a satisfactory protective parent-substitute who will give all the attention they demand they get along quite well After all their desire is to please the parent figure to be a good boy They frequently study hard and make good grades in an effort to plea e While at home they may be given ferrinine chores such as washing dishes dusting cleaning even sewing and cooking. They develop feminine identifications and may even become passive homosexuals

The school career then of the passive-dependent person is not remarkable. He is usually sissified to ome degree and prefers the company of older gris. His work adjustment may be quite satisfactory especially in the presence of an understanding sympathetic superior who doesn't object to a little apple polishing. He works diligently in an effort to please. But as he grows older and more skilled he is promoted instead of receiving attention he is expected to give it. Instead of being told what to to he i expected to give it. Instead of being told what to to he i expected to give orders and make decisions. With his increased re ponsibility he becomes helpless indecisive and anxious.

It is usually at about this time that be becomes married if ever at all to an older girl who reminds him of his mother. She may be dominating and solicitous yet she all o wishes to be treated like a woran. When her husband is reprinanded at work for his inefficiency she may cuddle him and sympatize with him but he will probably berate him as well not only for losing his job but also for his general inadequacy as a man. Usually by this time his father is dead, ill or financially insecure and the passive-dependent character feels compelled to contribute to the support of his mother. And his wife castigates him for that, too

This situation may precipitate a mild to severe anxiety state it may eventuate in a psychosomatic illness such as ulcrative et chits headache backache obesity alcoholism or the anginal syndrome If he attempts to improve himself—to become more agree ive—he may be rewarded with a peotic ulcer

Of course, he may be able to make some kind of adjustment at any of these levels. His marriage, if it lasts, may result in his adjustment as a passive, henpecked Mr Milquetoast in a con stellation of chronic tensions and hostilities. He may return to Mother, even give up his job, and help about the house while getting fat on 'Mother's good food "He may obtain the attention he requires by an incapacitating illness. In the extreme form, as he grows older and older he becomes a physical and psychological wreck, progressively more dependent on his wife and children, if any, whom he has brought up to be little passive dependents, or rebellious delinquents

THE PASSIVE AGGRESSIVE CHARACTER

The passive aggressive character is the man you don't like lou can't like him because he doesn't like you He has a grudge against society, especially against authority, and he shows it He shows it in his own passively aggressive way, so that you are aware of it but can't actually put your finger on it The most important thing for him is to commit an act which demonstrates his hostility, but remains "just within the law"

He seems to be on a perpetual sitdown strike It is not always necessary that the act be recognized in the military services this may be expressed as refusal to salute an officer Other pas sive aggressives salute very happily—with the thumb more or less obtrusively touching the nose! This type of character has been humorously typified as the sky writer who takes his air plane behind a cloud and writes "nuts" all over the sky fie typically expresses his hostility and aggression in such passive ways as stubborness, procrastination inefficiency, ignoring the social amenities, forgetting names, and showing disrespect in general

His behavior may be deliberately antagonizing Given a job to do, he may refuse with a surly remark, then shuffle off and per form it in a procrastinating, inefficient lackadaisical manner Reprimanded for his refusal he points out that he actually did the job then he feels wronged and persecuted This serves to confirm and increase his resentment against authority, yet he may remain completely unaware of his own part in the total proceedings When he is frustrated or cannot get his own way, he may injure himself make a suicidal gesture, or threaten suicide This behavior is analogous to the temper tantrum of the two-year old child It is as if he were saying, "If you don't do what I want I'll hurt myself and then you ll be sorry"

It can easily be seen then that passive aggression is an attitude It is an attitude upon which behavior is based. Any act can be passive-aggressive in nature, even exaggerated efficiency

and respect, and this is one reason why these personalities are not always recognized as such After all the goal of these men is not to have their acts pinpointed as afterssive but to express hostility without its being recognized Just as neglecting to say Sir can express disrespect and hostility so can a little extra emphasis on the word show the same thing yet the latter action cannot be criticized. These men will go to any extreme to avoid work they will actually work harder at avoiding duties than they would have if they had gone shead and done the job They will not be at hand when assignments are given out, or they will appear extremely busy (for the moment) doing something else They will actually hide or perhaps feign illness to avoid work They make frequent trips to the water cooler or the rest room Their intent is not merely to avoid work but more important to express their hostility toward the authority which forces them to do the work By the time they reach the age of 17 or 18 how ever this intent has lost a great deal of its consciousness and may not be recognizable to the men themselves or to the casual observer When apprehended and criticized for their disrespect and avoidance of work their basic sullenness and resentment may show itself in silent contempt a mumbled half intelligible epithet, or even in some cases an overtly sneering remark. The sullenness and resentment on the other hand may be covered over by protestations of innocence or misunderstanding but they are rarely accompanied by a promise to do better in the future These men are the classic ten percent who never get the word.

The passive aggressive aspects of character need not always be considered bad however as a matter of fact these are considered by many to be amon, it eleast undesirable of the irr mature personality reactions. The passive aggressive person is usually shrewd and can judge a situation fairly accurately and quickly He is frequently known for his biting cynical wit and satire. He has to know exactly how far he can go without getting into serious trouble. He has to know something about the personality of the person to whom he wants to show its disrespect. Can he—and should he—refuse an order or would it be safer and just as effective to be a few minutes late for an appointment? If the latter should it be two minutes or 20 minutes? This is a trick that many mildly passive aggressive persons use to demonstrate that a love affair has ended.

The passive aggressive tendency as may so many others may originate in conflict with parents who are typically very trict harsh and domineering They stultify the child semotional development by destroying his basic trust in them. They cannot tolerate the child s natural expressions of hostility and resembent. Even in infancy and early childhood the child realizes that it is too dangerous to overtly express hostility resentment even

fear or tears. His attempts at showin, affection are also rebuffed, for the parents are usually hostile to the child. So an ever widening vicious circle is set up. The child is rebuffed, rejected He expresses his hostility in passive ways such as refusal of food at mealtime but eating between meals bedwetting, demanding repeated glasses of water or trips to the toilet after retiring, stammering, and general apparent delay in development. It can be seen from these descriptions that the passive aggressive act serves as an attention getting mechanism. A scolding or a spanking is considered much better than no attention at all. Thus his spal becomes to get the most attention at the smallest price

This child is a feeding problem, toilet-training problem, and behavior problem in general. His acts are annoying to the parents but not actually punishable. Frequently the parents, at the end of their tolerance (which is relatively little) will spank the child "on general principles." And gradually the desire for attention is driven further and further into the unconscious until only the phenomenology of the passive aggressive character remains apparent

The passive aggressive may be a behavior problem in school, transferring to his teachers the attitudes he maintains toward his parents. Whether he learns well or poorly he is a thorn in his teacher's side. He is frequently late or truant. His lessons are not prepared and his assignments are turned in late. Until he learns how far he can go he may be in frequent fights with the cities tsudents. He tries to break the rules of games without being caught, but when he is caught he insists that he did not break a rule or blames it on someone else. As he grows older, symptoms such as bedwetting and stammering may persist, while he becomes a juvenile delinquent and is arrested for acts of van dalism, traffic violations or "on suspicion"

In the military service or on the job he is considered a "fluff off" or "gold brick." The hostility he engenders in his superiors by his resentment and passive-aggressive behavior results in his being assigned the more undesirable duties. Then his resentment and feelings of being "picked on" are increased. He takes advantage of minor illnesses to get out of work Backache, head ache, and painful feet are his favorite somatic complaints.

Like those with other personality disorders, he loves neither deeply nor well. His love and married life is characterized by his solfishness suspiciousness, and jealousy. The girl who can tolerate his behavior is the long-suffering masochistic type but frequently her patience wears thin too and the marriage ends in divorce. Because the manifestations of this condition are so protean the characters of the children are also varied. The parents manipulate the children to obtain their support in the

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family arguments. The children have no really strong character with whom to identify and usually become weak willed passive shy withdrawn selfish helpless and indecisive On the other land they may overreact and become hostile overtly aggressive mvenile delinguents

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CIGARETTE COUGH VS LUNG CANCER

The recent great excitement about the role of cigarette smoking in lung cancer has overshadowed all the other all effects from the use of tobacco The writer refers particularly to the disturbing chronic cough of the heavy cigarette smoker of long standing While the cough is not as devastating as cancer it is nevertheless serious especially in older people who have stroked a long time. The curious thing ab ut this is that the textbook in their discussion of tobacco and its toxic effects do not ment on the cough and yet this is practically common knowledge No greater proof that every layman 1 aware of it is needed than the famous advertisement of recent years by a leading cigarette m nufacturer which was broadcast far and wide. Not a cough in a carload

While the writer cannot say definitely that this irrit tion and result ing cough play a part in cancer of the lung one can s y that th re seems to be a certain r lat onship since it is more prevalent among older people smokers of long standing The writer thinks it import in to advise people who have developed this kind of cough to abstain from smoking They will be rewarded comparatively quickly by getting t d of a nasty and stritating cough and perhaps avoid even more serious trouble

> -MAX H WEINBERG M D P nsvl Md II nal p 1000 Oct. 1954



Clinicopathologic Conference

U S. Naval Hospital Bethesda, Md .

PLEURAL EFFUSION

Summary of Clinical History A 36-year old Negro woman entered the hospital on 28 May 1954 complaining principally of shortness of breath and pain and tenderness in the left side of the chest of about two years duration

She had previously been hospitalized on 31 August 1950 because of "indigestion," some left thoracic pain, shortness of breath, and orthopnea and was discharged after one month feeling much improved Several smears cultures, and guinea pig inocula tions from sputum and gastric washings were negative for acid fast bacteria Until a few weeks previously she had been able to continue to work in a restaurant despite moderate evertional dyspnea and left thoracic discomfort. About two weeks before admission she became very short of breath again and had several bouts of profuse perspiration and slight orthopnea She was treated at the dispensar for gas pains" and was also given antibiotics because of abnormal left lung findings, with some relief On this admission she specifically denied any cough hemoptysis, or syncope, but had moderate ankle edema on com pletion of her day s work on two occasions. She had been awak ened several times in recent weeks with acute shortness of breath, but had been able to return to sleep without therapy There was no history of past or present cardiac medication

The past history revealed that she had always been an active person, with the exception of hospitalization at the age of 18 when hysterectomy and possibly oophorectomy were performed because of pain in the right side of the abdomen and severe men orthagia unsuccessfully treated medically About 12 years ago a toutine chest roentgenogram taken at a hospital revealed evidence of left lung and left rib-cage abnormalities which were

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discussed with her and were followed serially, at six monthly intervals at first and subsequently with yearly roentgenograms. She was told that she did not require hospitalization and so therapy was offered. The exact nature of her thoracic problem was not explained to her.

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She has always been aware of asymmetry of the left side of the head and face with proptosis of the left eye Significant data obtained from her aunt indicates that she experienced he first menstrual period at one menth of age with regular recurrence of periods at monthly intervals until 18 years of age when hyster ectomy was performed as noted above Medical investigation of this prescocity was never solicited

The family history was essentially noncontributory One brother died at two years of age from pneumonia Another brother now 44 years of age, has diabetes mellitus

She was married in 1936 at the age of 18 but never experienced pregnancy Libido appeared to be within the limits of normal

Her weight had not changed appreciably over the past live years Eyesight had remained normal. There were no significant headaches. There was occasional mild right kine discorted without swelling, and a similar rheumatic complaint was present in the left shoulder area. She never observed abnormal skin pimentation and never suffered fractures or other bony change except the asymmetry of the skull as already stated. Spontaneous nosobleeds recurred frequently throughout childhood but nose after the age of 20.

Physical Examination The patient appeared to be slightly dys pneic on mild effort but fairly comfortable while seated Blood pressure was 110/80 mm flg pulse was 70 per minute and regu har and temperature was 98 2 F Her weight was 12° points (average 130-135 pounds) There was an asymmetry of the skull with prominence of the left hemicrenium chiefly in the frontoparietal area moderate proptosis of the left eye and some promi nence of the left orbital area. The head appeared globular and large A consulting ophthalmologist reported normal fundi with the exception of slightly shallower cupping of the left disk as con pared with the right slightly greater resistance of the eye to digital pressure and normal visual acuity peripheral fields and muscle balance Exophthalmometer measurements (Hertel) revealed 19 mm in the right eye and 24 mm in the left eye thyroid was small and there was no significant enlargement of lymph nodes in the neck or abnormal rominence of the neck veins There was slight scoliosis toward the loft side There was a definite inspiratory lag involving the left side. The tra

ches appeared to be deviated sightly to the left. There was duliness to flatness on percussion over most of the left hemithorax with marked diminution of breath sounds and vocal fremitus. The right hemithorax was normal except for shift of the mediastinum to the right. There was tenderness over the second and third ribs on the left side anteriorly with palpable irregularity in the contour of several ribs. The point of maximum cardiac impulse and the heart tones were best heard to the right of the midline. No murmurs were heard. The liver edge was palpable two fingertreadths below the right costal margin. The peripheral pulses were normal and there was no pedal edgma. There was normal motion throughout all of the extremities and no clubbing of the fingers. A polvic examination was nonrevealing Secondary sex characteristics were within the limits of normal

Laboratory Studies The laukocyte count was 5,850 per cu mm, differential, neutrophils 80 percent, lymphocytes 28 poteent, monacytes 4 percent eosinophils 8 porcent, hemoglobin, 11 grams per 100 ml, hematocrit 39 percent blood urea nitrogen 20 mg, uric acid 43 mg, serum calcium 99 mg, inorganic phosphorus 44 mg, all per 100 ml, alkaline phosphatase, 12 6 Bodansky units, urinalysis, negative, scrologic test for syphilis (hahn), negative, total serum protein, 65 grams, nlbumin 42 grams, globulin 23 grams, all per 100 ml, serum chloridos, 95 mEq/L

A gastrointestinal series to vealed displacement of the esoph agus to the right and posteriorly by what appeared to be nortic arch and possibly auricular indentation. Exercity urograms failed to reveal evidence of renal or ureteral calculu

Course in Hospital Thoracentesis was performed on 23 June 1954 with removal of about 420 cc of ambor-colored fluid The procedure was performed with some difficulty because of the impression that the needle quickly entered into dense intra thoracic tissue Analysis of the fluid revealed 917 crythrocytes per cc and 60 leukocytes per cc (40 granulocytes and 20 lymphocytes) Smear and cultures of the fluid Iniled to reveal organ issue Bronchoscopy was not performed

On 13 July 1954 thoracotomy was performed through the fourth left interspace with removal of a rib and aspiration of straw colored fluid A biopsy of the lung tissuo was obtained and the incision closed

The patient has made a satisfactory postoperative recovery, has minimal exertional dyspnea at the present time, and is preparing to return to work

DISCUSSION

Do to Z kmu d I would like to call on Doctor Fries to show us the x rays in this case

D r F Before showing the r rays I would like to present the photographs of this patient made four years ago in 1950 at the time of her first admission (fig. 1A and B). They demonstrate enlargement of the left hemicranium and facial bones with propiosis of the left eye



Fg e I Photogr ph of pat ent 1950 dem to t g nla gement of the l fi here trae m and f cial bo e with propt of the l ft eye (A) F nt and (B) de v ew

We have photographs from this admission (four years later) and the findings are sim lar indicating that no app tent change has taken place. The x-ray findings in the kull correspond to what is seen clinically (fig. 2A and B). The entire left side of the skull and the f-cial bones are involved by a bony disease. We see alternate areas of density and radiolucency and expansion to the left hemicranium. The larg at measurement of the expanded skull is 7 cm. The less on extends to the midline with a normal cranium on the right side. You cn see that the rim of the right orbit and the mandible are writhin normal limits. The W ter's view very clearly demonstrates the tremendous en largement of the skull resulting in encroachment and ecosion of the outer table of bone in addition to involvement of the inner table.

We have a chest x ray from the previous admis ion four years ago demonstrating a large dense mass involving the entire left chest with a shift of the mediastrinal contents including the heart to the right side. The right lung appears normal (fig. 3). There is an exp. ndin. radio-lucent lesion involving the entire right eighth tib. A similar lesion in olves the third left rit.

Comparing the present x rays with the studies made four years previously we find no change in the skull chest or rib lesions. Because the chest lesion shows no change it can be assumed that it may represent a benign process. We believe this chest lesion can possibly represent a manifestation of fibrous dysplasia. Our reasoning is as follows. The skull is of tremendous thickness indicating that extensive fibroblastic growth has taken place. This same process could be present in the left third rib with the production of a large dense mass growing

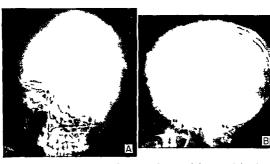


Figure 2. Skull roentgenograms showing involvement of the entire left side of the skull and the facial oones with alternate a eas of density and translucency (A) Posteroanterior and (B) lateral views

into the left thoracic cage. The thoracentesis and diagnostic pneumo thorax were helpful because the injected air defined the lower limits of this mass. Because air did not dissect superiorly to separate the mass from the chest wall it was assumed that the origin of this tumefaction was somewhere in the superior part of the left thoracic cage most likely in the third rib. In the differential diagnosis more likely than fibrous dysplasia would be a large teratoric tumor because these tumors grow to large size and may not change over a period of years. The third possibility would be a benign resothelioma.

Doctor Z kmund Thank you. I would like to call on Doctor Carr* for comments on the skeletal lesions seen in this case

Doet r Corr In a lesion such as Doctor Fries has demonstrated and such as our history gives us we have to think of lesions of bone which have their origin in the medullary portion of the bone and which expand bone In this particular lesion we have gone through the sections previously as well as the rrays apparently there are no long bones involved. We note lesions involving the skull ribs and at least one vertebral body

Capt. C. R Carr (MC) USN Ch f of Orthopedics.

Those lesions which commonly give pictures with many variations of an expanding riedulary les on of the bone may be listed for purpose of reference these include solitary bone cysts giant cell bone tumors fibromas of bone (which are usually considered to be due to cell rests or arrest of development in ossification of an indiv dual bone) enchorder mas which are quite often confusing because they can be multiple



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the cystoid forms of myeloma Paget's disease osteodystrophia fi prosa generalisata (this is the older term of course for von Reck linghausen's disease of hype parathyro dism and its several manifesta tions) skelet 1 x inthomatosis and the fibrous displa ias polyostoti and ponosotic Let us cover xanthomatosis quickly. There is a whole group of these which are usually considered as "storage diseases of bone. The pathologist and the bone physiologist will probably argue with me a good bit about whether they are storage diseases of those particular substances but in general disturbances in metabolism of keratin phosphates and the cholesterols will give some clue as to the type of lesion. These are Gaucher's disease. Niemann Pick disease. Hand Schüller-Christian disease and generalized osseous xanthomatosis. If we considered the skull alone one would be quite suspicious of the Hand Schüller-Christian syndrome.

I am inclined to believe that in this case fibrous dysplasia probably offers the best diagnostic possibility depending upon the findings of the biospy which would differentiate it from one of the types of storage disease notably the xanthomatous lesions. This girl did have precocious puberty. We have no evidence of pigmented spots. She is 'egro and I am not familiar with the incidence of pigmented spots in Albright's syndrome in the Negro race. I hope Doctor Jeghers will be able to give us information on this. Albright's disease or Albright's syndrome is simply one manifestation of fibrous dysplasia.

Lichtenstein and Jaffe in 1942 attempted to classify this whole broup of bizarre developmental diseases of bone of this type under the term fibrous dysplasia and I thinh that it is a useful classification Albright's syndrome is one peculiar variant probably a rather advanced one with its onset early in life

in the differential diagnosis hyperparathyroidism is to be considered Remember that in hyperparathyroidism we usually have a high-serum calcium low serum phosphorus and increased urinary calcium output whereas in the various fibrous dysplasias we seldom if ever have any disturbance in blood chemistry unless it is in the phosphatase as a result of increased activity in the bones. Another thing that might be of some concern is Ollier's disease which is a synonym for dyschondroplasia. This affects the epiphyses whereas fibrous dysplasia seldom affects the epiphyses Another condition to be differentiated is neurofibromatosis which can give many and varied cystic lesions of the bone but is usually associated with pigmented spots and also with multiple tumors along the segmental distribution of peripheral nerves The other diseases considered in the differential disqualify themselves pretty generally from the story we have heard and I shall not cover them one by one I think this case is unique and I hesitate to classify it strictly speaking with Albright's syndrome (1) because it lacks pig mentation of the skin and (2) because the long bones as far as I know are not involved From a nosologic viewpoint I think if we give a dis ease or syndrome an eponym it should be almost identical with the original description.

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in the differential diagnosis hyperparathyroidism is to be considered Remember that in hyperparathyroidism we usually have a high-serum calcium low serum phosphorus and increased urinary calcium output whereas in the various fibrous dysplasias we seldom if ever have any disturbance in blood chemistry unless it is in the phosphatase as a result of increased activity in the bones. Another thing that might be of some concern is Ollier's disease which is a synonym for dyschondro plasia. This affects the epiphyses, whereas fibrous dysplasia seldom affects the epiphyses. Another condition to be differentiated is neurofibromatosis which can give many and varied cystic lesions of the bone but is usually associated with pigmented spots and also with multiple tumors along the segmental distribution of peripheral nerves The other diseases considered in the differential disqualify themselves pretty generally from the story we have heard and I shall not cover them one by one I think this case is unique and I hesitate to classify mentation of the skin and (2) because the long bones as far as I know are not involved From a nosologic viewpoint I think if we give a dis ease or syndrome an eponym it should be almost identical with the original description.

- D + Zikm nd. Thank you Doctor Carr Doctor Hill will you come up front here behind this microphone and comment on the features of her sexual precocity?
- Hill From the gynecologic standpoint we are interested in these people because of the fact that they have precocious puberty However although they may have some vaginal bleeding it is not a true menstruation because it is not associated with ovulation. It is really a passage of blood from the vagina always irregular and it may start at a very early age in life in childhood or at any time in the teens Then when these girls get to the age of puberty they will usually settle down and have normal menstrual periods. They also may conceive and bear children at a later stage in life. These ovaries usually do not ovulate We do not know why One reason given is that the changes in the base of the skull suppress the anterior piruitary. This particular patient has had a disturbing surgical history because at the age of 18 she underwent a subtoral hyst rectomy and removal as far as she knows of both ovarie and tubes. It is not clear as to just why this was done anyhow pelvic examination at the present time shows a typical castrate pelvis. The vacina is dry and pale, and is very firm and smooth. The cervix 1 just a dimpled structure and very acrophic The corpus is absent and the adnexal regions are negative. It was interesting to me to learn that she has a normal libido and has always had a normal sexual response in both of two marriages. Two ye is ago she went through what she thought might have be n a menopausal yndrome as suggested by nocturnal sweats and numerous hot flushes followed by cold sensa tions This gradually disappeared Now whether this is associated with ovarian absence or whether it may be failure of the adrenal to produce estrogen is not clear. Maybe the drenals have been producing estrogen for several years for this par nt as we think they do som times and this has finally ceased These of course are suppositions Recard n. this patient's secondary sexual characteristics the left breast is smaller than the right although she attributes this to recent thoracic surgery. The breast seem to be very small on both sides there is normal suprapuble and axillary hair and the external penitalia ha e normal development for a person of this ag. That is about all we ha e to contribute on this particul r patient Sexual precocity can also occur in male children with this syndrome but n t n arly as often as n female children. The fact that the female p tients do have menstrual disturbances in ca es in which the skull is not involved tends to show that dysplasia of the base of the skull is probably not an e planatory factor a sociated with the int rior pitu tary
- p : Zikm d Thank you Doctor Hill At this moment I would like to ask Doctor Flipse to comment on the chest x ray with particular emphasis on the frequency of this type of chest less n in this or re lated bony disea e tates

Doctor Flipse First of all I would like to make a few general remarks on the so-called blacked-our lung. Then one sees an opaque hemithorax on a chest roentgenogram the problem is to decide whether there is a consenital or acquired absence of the lung an atelectasis or collapse of the lung either alone or associated with fluid, a diffuse pulmonary disease such as pneumonia a large intrathoracic tumor or pleural disease. In this particular case we can rapidly exclude the first three considerations on the basis of the history the physical findings and x ray evidence of a space-occupying lesion in the left hemithorax. Thus we are left with two possibilities—some type of intrathoracic tumor or pleural disease. As far as the diseases of the pleura are concerned it is helpful to differentiate between inflammatory mechanicocirculatory and neoplastic diseases of the pleura. Adequate study of the pleural fluid greatly facilitates this differential diagnosis. In this case the initial thoracentesis was traumatic with bloody pleural fluid whereas the second fluid specimen removed at the time of operation was clear and sterile. Thus we are dealing with a sterile hydrothorax thereby excluding a hemothorax and chylothorax. These findings addition to the other data tend to exclude inflammatory disease of the pleura. The neoplastic diseases of the pleura may be benien or malignant primary or secondary

There is a recently emphasized entity the so-called localized fibrous mesotheliona of the pleura which I would consider most seriously in my differential diagnosis in this case. This entity has been well described by Clagett and his associates in the September 1952 issue of the Journal of Thoracic Surgery Localized fibrous mesothelioma of the pleura is a benign tumor and should be clearly distinguished from a malignant pleural mesotheliona. It has been seen in patients from 20 to 70 years of are and has been known to be present for from one week to eight years before its successful surgical removal Its weight has varied from nine grams to 5 000 grams. One reported case is quite similar to the pulmomiry problem presented by our patient. There was a similar chest x ray in a 26-year-old woman presenting symptoms of dyspnea and a known duration of disease of five years from whom a 4 000-gram tumor was removed. These tumors are frequently associated with massive pleural effusion and about 60 percent of the patients have digital clubbing or rheumatoid arthutis like symptoms. This tumor is benign and the patients are cured by operation, so it is important to consider it in spite of its farity

As far as rechanicocirculatory distubances of the pleura are concerned it is well known that large intrathoracic turnors both benigh and ralignant can p oduce pleural effusion by pressure or resultant theorphosis in the vessels of the mediastirum and chest. The thoracentesis and replacement of a portion of the fluid with air proved that this patient did have a large turnor attsing in the upper left chest associated with a pleural effusion. It is impossible to say whether the turnor had its origin in the lung the pleura of the chest wall. It certainly cannot

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be a malignant tumor to have been present for over 12 years and to have been basically unchanged in the past four years

It is interestin, to speculate if this tumor had any relation to the underlying fibrous dysplasia of bone. This patient does have extensive involvement of the ribs on the left and there is a firm swelling of the left upper anterior che is wall so that conceivably this tumor could represent and extension of het bone disease. However, in the literature and in Doctors Albright and Reifenstein stext. The Parathyroid Glands and Metabolic Bone Disease no similar case has been reported. Doctor Albright does state that a few of these patients die of cor pulmonale lie does not mention the pathogenesis of this right heart failure so I assume it must be secondary to thoracic cage deformity for there is no record of pulmonary involvement in this disorder.

D for Zikm d Thank you Doctor Flipse Doctor Berley will you tell us what the thoracotomy procedure disclosed?

- D 1 B 1 y An operation was performed on 13 July 1954 under thoopental sodium (sodium pentothal)—nitrous oxide—ether anesthesia. The patient was placed in a left lateral position and an incision was made and carried down over the sixth rib. The periosteum was elevated and a lage segment of this rib was resected and sent to the p thology department for examination. The pleura was immediately seen to be thickened and firm and as it was opened a large lobulated turn it was evident. This tumor appeared to be a firm calcifying mass occupying almost the entire left chest carry and was firmly adherent to all the mediastinal structures a d to the left chest wall it was obviously not amenable to surgical renoval. A biopsy of the specimen was obtained and closure as effected.
- D 1 Zikm d Thank you. That gives us the basic dat in the case Doctor Jeghers would you, with the information presented at this time d scus the d fferential possibilities and add comments pertin nt to the p esentationat this point?
- D I Joh I would like to discuss this case in the form of not known my of the new facts brought out today in other words what would be the reason g if one went through this case with just the data variable in the printed case history

This is the history of a 36-year old Negro woman who is alive This offers the helpful point that we are dealing with a more being condition than might otherwise be the case in the average clinical pathological confesence. There is enough data from prior medical studies to git a good background for discussion. Doctor Zikmund has read the ase to tory in detail and I will not repeat it.

In going o e the case history it is apparent that three pivotal points may be been ght out for discussion. The first is the precocious

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menstrual bleeding the second is the multiple sceletal abnormalities and the third is the nature of the disease of the left thorax with pleural effusion

As a general rule it is best in a differential discussion to consider two fundamentally different approaches and to reason them our separately if possible. The first line of reasoning centers about the question of whether the whole clinical picture can be explained on one basic underlying pathologic condition or whether multiple conditions are present. Unless our reasoning explores both paths, we may frequently overlook various diagnostic possibilities.

I would like to discuss three aspects of this case taking up first what the thinking should be with regard to precocious menstrual bleed ing which can be looked upon as part of the problem of sexual precocity

First with regard to the sexual precocity which implies increased sexual development and function occurring prior to the usual accepted age in a female precocity with heterosexual characteristics commonly results from a disease of the adrenals and would be manifested by such features as an increased size of the clitoris increase in hair (hirsuitism) et cetera. This can be immediately excluded. When isosexual characteristics predominate as they do in this case various other possibilities must be considered. First is there a lesion in the region of the hypothalamus such as a tumor or an inflammatory disorder? Relatively few such instances in the female sex have been recorded. The long duration of the history of this case would be against this diagnosis.

Secondly one considers the idiopathic form which is believed to be sort of a functional increase in activity in the hypothalamic center producing early activation of the gonadotropins. This is a very definite possibility Frequently when no other reason can be found one ends up with the diagnosis of an idiopathic type of sexual precocity.

Thirdly sexual precocity may develop as a result of some tumor commonly of the ovary with excess bormonal secretion capable of producing this clinical picture. A representative example commonly given is a granulosa cell tumor of the ovary. If this were true the operation on the pelvis at the age of 18 would have brought out this point. The long course is also against this diagnosis as is the fact that a granulosa cell tumor is not associated with bony abnormalities.

Next to be considered is Albright's syndrome which, in the female is characterized in a considerable percent of cases by sexual precocity. The mechanism of the sexual precocity in Albright's syndrome is not clear but it may be on some hypothalamic basis. Influence of skull changes on hypothalamic function or some changes in the mammillary bodies are among the reasons proposed. Thus although the explanation is not clear it is certainly well accepted that sexual precocity is an important part of the Albright's syndrome.

Another possibility which can be readily excluded is that early in life for some reason this woman received medication with estrogenic substances. In looking over those variou possibilities the two which seen most reasonable in explaining on a common pathologic basis the bone lesions the sexual precocity and the features in the chest would be a tumor (either in the hypothalamic area or an ovarian tumor capable of producing estudies substance) associated with metastases. Though possibility of a tumor with metastases can be excluded by virtue of the long duration. Albright's syndrome certainly stands on firmer ground in explaining sexual precocity and bony chances.

The various possibilities suggested by the next feature of the case multiple skeletal abnormalities can now be considered. My first consideration is whether in any way this could be due to a postmenopausal type of osteoprosois. This lady supposedly had a bilateral ophorectory at the age of 18 and then later in life developed multiple bone changes with an increased alkaline phosphatase and at least one probable bony fracture. The common pattern in postmenopausal osteoprosis is primary in olvement of cancellous bones which means essentially the vertebral bodies and the upper ends of the femus. With osteoprosis the vertebral bodies often collapse rather than manifest scollosis and the femus shows the classical fracture of the neck. This is not true in this case and this diagnosis can probably be excluded.

Is this hyperparathyroidism with osteit's fibrosa generalis ta? The characteristic blood chemistry changes are lacking in the patient Furthermore there 1 no association with sexual precoc ty in this disease. Also the abnormal ties in the skull are not the type to go with hyperparathyroidism. I think this dia, noiss might well be excluded.

Is this one of the lipoid granulomatoses? The xanthomatoses or an eosino-hilic granuloma would be two possibilities. The bone lesions are more apt to manifest a punched our ppearance on the roenigeno gran and often respond to radiation therapy. I am sure that biopsies have been taken in the past and the diagnosis would have been made if present. An eosinophilic granuloma sometimes has an eosinophilic blood response. There is an eight percent eosinophilia in this patient but I do not think that that is enough to lead one to this possibilit. The overcrowth of bone here is also acainst it.

Is this some form of multiple metastases? If the bone lesions had existed for only a short time this possibility would have to be con sidered. The long duration of the bone lesions are against it as would be the lack of a prim it, set for the origin of the metastases. In other words could this be ben gn sexual precocuty, with the les on in the chest as the primary tumor source and the bone lesions metastatic from it? Fren here, the duration of the chest lesion is much against a type of tumor such as bronchogenic care noma with metastases to the bone. I think one may well exclude this. The ovaries have been removed in this patient. The picture is not one of an adrenal tumor. We

would be hard put to find a primary site to explain multiple bone

Is this von Recklinghausen's disease of the neurofibromatosis type? This possibility must at least be considered because if often causes multiple bone lesions. This patient lacks the characteristic cafe au lait pigmentation. However, it is sometimes difficult to demonstrate in Negroes. There are no skin fibromata. Particularly in women, this condition does not lead to sexual precocity. For these reasons. I believe that it would be a difficult diagnosis to establish.

We come finally to polyostotic fibrous dysplasia Albright's syndrome. This entity is characterized by a somewhat segmental type of bone lesion distribution involving various parts of the skeleton and often soaring immediately contiguous bone i e affecting parts of the skull but not the entire skull. It tends to be of long duration and may exist through a long period of life. It commonly has some skull changes and there are reports of instances where the skull changes have produced proptosis of an eye which is present in this case. The bone may manifest areas of both increased and decreased density and often an elevated alkaline phosphatase blood value is noted. These bone changes fit well into those which ou patient shows. Especially helpful is the cormon association with sexual precocity in f-males. This also fits into the picture this patient presents.

The third part of the syndrome the skin pigmentation may cause some difficulty in explanation. There are several things to consider Possibly the pigmentation is not always present. Secondly, this patient is Negro and pigmentation changes may not be noticeable. At times the spots are difficult to detect. In this particular case, the pigment may not be readily detectable as such but may be simply blended with the racial pigmentation. The sexual precocity and the multiple skeletal abnormalities fit best together as an Albright's syndrome.

We are now left with the need of an explanation of the features described in the left thoracic cage Several things are known about this thoracic lesion This lady has a scoliosis She has some displacement of the mediastinum to the side opposite the density in the left chest Several possibilities would certainly come to mind First is this tuberculosis with tuberculous pleurisy thickened pleura now with some degree of pleural effusion? Against this is the fact that she had been unsuccessfully studied for this possibility as well as for the long duration Could this be an old empyema? There is no history to go with it and after many years an empyema would not exhibit a thin serous pleural effusion with shift in the mediastinum

One diagnostic possibility worth entertaining is the well known fact that people with a deformed thoracic cage may develop what is known as scoliotic heart disease and may eventually manifest features of a cor pulmonale and cardiac failure. There are certain aspects of this case that are at least slightly suggestive of heart failure such as shortness.

of breath and on several occasions ankle edema. The characteristic features that you might like to find in generalized congestive failure t: e increase in venous pressure and so forth, were not manifest

Another possibility is a tumor of some sort with production of fluid by metastases or in some benign fashion as for example in a Meigs syndrome due to an ovarian fibroma It is entirely possible for a benign tumor in the pleural cavity to produce fluid. The chest density was seen as far back as 1950 and may have been present even longer The thoracic cage lesion existed even longer This period is too long to suggest any of the common malignant tumors. It certainly immediately excludes bronchogenic carcinoma and to my mind would also exclude a diffuse spreading mesothelioma. It would not exclude the possibility of some benign tumor of the thoracic cage producing both a fibrous reac tion in the pleura and fluid nor would it exclude a localized fibrous type of benign mesothelioma The latter type of tumor was commented on just a few moments ago and may produce the picture of a rheumatoid type of arthritis clubbed fingers or even an cute osteoarthropathy As far as I know there is no definitive association of such a tumor with the Albright's yndrome

The logical conclusion would be that this lady has an Albright's syndrome and an independent disease in the left thoracic cage which may well be some kind of a benight tumor with a pleural reaction both fibrous and fluid

Dr Jeahers diagnosis

- 1 Polyostotic fibrous dysplasia (Albright s syndrome)
- 2 Beniem tumor left chest

PATHOLOGIC FINDINGS

Det Zikm d Thank you Doctor Jeghers Doctor Turner will you go ahead and give us the reports on the two biopsy specimens submitted to you?

Do 1 T - There were two specimens received in the laboratory The first consisted of a major portion of a rib which measured 17 cm in length. No abnormality was seen upon gross examination and on microscopic examination only normal bone was reve led. There was no bone lession present but the examination was of some value because it indicated that generalized bone disease was not present. The second tissue specimen consisted of a wedge biopsy measuring 25 cm in its greatest diameter. The convex surface of this biopsy specimen was covered by a smooth membrane consistent with either pleums or a capsule. The cut surfaces were firm red and somewhat gritty. The tissue cut with very firm resistance and gave a gritty sensation as the blase passed through the tissue. Microscopic findings are illustrated in the photomicrograph (fig. 4). This lession consists essentially of a back

ground of dense fibrous tissue You will note that the fibroblasts are quite mature that the nuclei are small and that there is a moderate amount of intercellular eosinophilic material Embedded in this fibrous matrix are scattered poorly formed bone lamellae of the so called



Figure 4. Photomicrograph of tissue specimen, showing background of dense fibrous tissue mature fibroblasts and moderate amount of intercellular cosinophilic material (Hematoxylin and cosinstain × 200)

bone fiber type. This bone is very poorly calcified and lacks the usual architectural arrangement of well formed spongy bone. About these spicules are considerable numbers of osteoblasts at frequent intervals and an occasional multinucleated osteoclast.

Pathologic diagnosis
Fibrous dysplasia of thoracic wall

Doctor Zikm ad Thank you Doctor Turner

That concludes the presentation of the case with biopsy tiss diagnosis

Briefly to summatize the main points of what we have given joths is the case of a 36-year old Negto woman who presented herse because of Cardiorespiratory symptoms and in whom significant finings included skeletal disease best described as consistent with the same sexual precocity and the presence of a space of cupying lesion in the left hemithorax which on thoracotomy reveal tissue diagnost c of polyostotic fibrous dysplasia. You might ask at I shall clear the point now why the bone biopsy specimen reveal normal bone architecture. In the x r ys as emphasized before the meeting by Doctor Friest, the rib that was removed was selected largely provide adequate exposure of the left pleural Cavity. It was not one the ribs reported as howing disease by the x ray. Had thoracotom been feasible at a higher rib level such as the third rib bone microcopy would likewise have revealed fibrous dysplasia.

Doet Plitman In instances of eosinophilic granuloma involvir soft parenchymatous tissue in which healing takes place either after intradiation of spontaneously what is the histologic picture in sucinstances or has there been any experience along these lines?

Do for T r The teports that I have read on the subsequent his

syndrome there is no ctive proliferation of fibrous tissue. It is simple the remains after healing rather than a proliferative change.

Det Plim I asked the question purely because at least on investigator. Doctor Scapper. has suggested that possibly monostoric through displacia of rib may sometimes represent sportaneous healing.

tologic examination of treated lesions revealed only a scarring or normal fibrous tissue at the previous site. In contrast to Albricht

fibrous dysplasia of rib may sometimes represent spontaneous healing an eosinophilic granuloria

D to Zkm d Doctor Turner I should like to ask you a question that is the significance of the presence of giant cells in this tissue Are giant cells diagnostic features of fibrous dysplasia?

Do to Turn r The important thing in the evaluation of fibrous dyplasis as far as giant cells are concerned is where they are loc tedyou will notice in this photomicrograph that the giant cells were closto bony picules where normal osteoclasts reso b bone. In the giant cell tumors of bone of course giant cells are scattered throughout the stroma. That s the important differential

D to Zikm and Are there any other questions?

Doet Flip e We are going to have to treat this woman pethaps i the near future I wonder f Doctor Jeghers has ny therapeuric sugges

Lt. C. L. Pl can (4C) USNR, A at tall did

tion to make or if he has none whether the surgeons believe that they can remove a part of this pulmonary tumor for us and perhaps help her out?

Octor Jeghers I do not think I could make any pertinent suggestions in regard to therapy

Doetor Zikmund I might furnish some brief comment on that We have as you know considered whether or not this patient eventually will come in with cardiopulmonary failure and just what we might offer her. The Chief of Surgery believed as did we that because this is perhaps the first reported case of an Albright's syndrome with this type of pulmonary complication and therefore with no precedent to serve as a guide that consideration would be given eventually to surgical removal of an adequate amount of the dysplastic tissue in order to restore the mediastinum to its normal position. Certainly with this type of bony fibrous dysplasia perhaps having destroyed most of the lung tissue we could not expect to do more in order to attempt to improve terminal cardiorespiratory failure.

Doctor Horiney I did not hear it mentioned but I wonder if anyone would comment on whether or not these bony lesions are progressive and whether or not there would be any chance of cerebral manifestations at some future date. Also no one mentioned whether the enlarged liver could be secondary to the lung problem.

Doctor Zikmund Doctor Carr perhaps you might like to comment on the first part of that question

Doctor Cor Actually the lesions in the bone in these cases of ar rested development follow such a bizarre pattern that it is difficult to evaluate whether they will or will not grow They generally grow with the bone as the child grows and they are space-occupying They are not progressive from the standpoint of new lesions occurring. Most of them that are there have been there all along although they may grow in size somewhat The picture here in the skull and the ribs leaves us somewhat at a loss because we do not often see them located in just these locations From a surgical standpoint they may give us trouble in the long bones with possibilities of pathologic fractures and dis turbances near the joints I think that it is possible in a situation of this kind that a stimulus might exist whereby more fibroblasts would be proliferating and laying down this fibrous tissue. It would seem to me that this might have been occurring in this lung in which case I wonder if the radiologist would have anything to suggest in the way of arresting proliferation of the fibroblastic tissue assuming it were shown that such proliferation was occurring and that the lesion was actually expanding its size

Do for Fries: From the x ray studies there is no apparent change in this lesion over a period of four years. The growth therefore if any

Lt. (18) T C. H rtney (MC) USNR Assistant in Med ci e

has been minimal. Such lesions have been treated with x ray for the relief of pain and at times this is effective but x ray threapy does not apparently control the growth of the bony lesions of fibrous dyspl sia Some cases of fibrous dysplasia have been treated with cortisone especially when pain is present in an attempt to slow down the fibro blastic growth. These have been few in number and long term follow ups are not available. In this particular case it would not be indicated because recent growth of the bony lesion and pain have not occurred. The cerebral manifestations in this patient may be explained simility to those associated with Paget's disease where the inner table of bone encroaches on the cranial contents and the underlying brain undergoes atrophy. In fibrous dysplasia there is a known relationship between extensive frontal bone involvement and psychosis.

Det Zikm d The liver was noted to have been abnormally enlarged but not tender The Rondot Pasteur sign was negative The question of cor pulmonale obviously would be a matter of how much clinical progression there may be in the present mediastinal problem with resultant greater load on the heart I think it I really an unpredictable situation whether or not her death will eventually be cardiac or some other complication of her disease perhaps intracranial I would say th t it is a very real possibility that she will eventually die a cardiac death most likely from cor pulmonale. Her neck veins are not distended Certainly with the cardiac silhouette so badly obscured and the electrocardiogram not showing significant changes present clinical findings at this time are inadequ te for diagnosis of cor pulmonale although obviously that seems to be the direction in which her problem leans and which is accounting f r symptoms of effort induced shortness of breath and some of the other symptoms of the cardiotespitatory system already stated

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The general uses of ant biotics in military medicine are similar to the general civilian uses

On the b titlefield the use of antibiotics do not preclude m nimize or modify the accepted surg cal principles of wound toilet debridement and secondary closure

—GEORGE E ARMSTRONG Maj G ral MC USA

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¹ Clg OT W Donald JR ad Schand HV L 1 dfb us m th 1 m fpl un j Tho act Surg 24 213 230 Sep 1952
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Perforated Gastric Ulcer and Gastrocolic Fistula Associated With Prolonged Cortisone Therapy

KENNETH P BACHMAN Lieutenant Commander (MC) USN
CHARLES E ROGERS Lieutenant (MC) USN

ITH the advent of the widespread use of cortisone and corticotropin (ACTH) in therapy, it was not long before the possible side effects of these powerful drugs became manifest. One of these, peptic ulceration and its complications, has prompted this report

Numerous clinical observations suggest a relationship between unusual amounts of circulating adrenal cortical hormones or corticotropins and peptic ulcerations. Repeated warnings against the use of these drugs in patients presenting a history of peptic ulcer are found in the literature 1.2.3 Complications such as massive hemorrhage 2 and perforation 5 have been reported A careful search of the literature has however, failed to reveal any case in which silent, spontaneous perforation of a gastric ulcer occurred with the formation of a gastrocolic fistula. Such a case is here presented

CASE REPORT

A 33 year old woman had been well until she experienced the onset of severe psoriasis involving about 50 percent of her skin surface about nine years prior to admission to this hospital Within three years after the onset of the psoriasis almost all of the skin was involved and arthritic changes were evident in the joints of both hands and feet. Two years after the onset of the psoriatic arthritis, the joint changes had become severe enough to render her a semi invalid. She was first hospitalized in Janu ary 1951. From 1951 to the last admission she was generally ambulatory, although her arthritis and skin condition gave no evidence of substantial remission.

The dates of hospitalization as related to cortisone and ACTH therapy are summarized in table 1 It should be noted that ACTH was administered only on two occasions, the first time in 1951 and the second during the preoperative and postoperative periods Also of importance is the fact that during the 12 months prior to

From U.S. N. val Hosp tal. St. Alban. N. Y. Condr. Bachman is now sened to U.S. N. val Adm. strat ve U. it. L. ke N. d. B. e. Las Vegas. Nev.

fer death she received a minimum of JO mg of cortisone daily and during the last six months of life 100 mg or more

TARLE 1

Adm d te	Cort	ACTII
I p t t 1 2 51 t 4 3 51	200 mg sally d sly gr dually d cr i g t 25 mg da ly	100 mg da ly f 27 d y
0 tp t t 43 51 to 6-18 51	25 mg 1ly da ly	N
I-p t t 6-18-51 t 8-18 51	500 mg ntram su- l ly daly f 21 d y	N n
Otpt t 8 18 51 c 2 4 53	N	
In-pat t 2 4 53 t 2 14 53	100 mg sallyd ly	No
Orp tie t 2 14 53 t 8 5 53	50 mg llyd dy	N
In-p t t 8 5 53 r 9-2 53	100 g rally daly	No
O rp tie t 9-22 53 t 1 29-54	100 mg sallyd ly	No
I -p tie t I 29-54 t 2 18-54	V sabl rag g 100 mg d sly	Dur g pre-d pot operat v ph

In January 19.4 she was admitted to this hospital complaining of mild abdominal cramps of one week a duration associated with severe diarrhea. The diarrhea was related to the intake of foods and ingested items appeared in the stool as early as 20 minutes after eating On rare occasions she had experienced nausea and vomiting with this attack. There was no previous history of grationitestinal disease Tie diagnosis of a gastrocolic fistula was considered and later established by gastrointestinal roentgeno, raphic series (figs 1 and 2) The fistula appeared to be located along the greater curvature and to empty into the mid transver e colon Although the patient was not a good operative risk it was obvious that surgical intervention was necessary She was therefore aven intravenous infusions of serum al bumin fructose solutions and electrolytes in an effort to prepare her for surgery

Seven days prior to operation a sudden drop in blood pressure occurred and it was necessary to add small amounts of levar terenol bitartrate (levenhed) to the solutions being administered intravenously to maintain the systolic pressure at 100 mm Ho

Cortisone was increased to 100 mg by mouth and 100 mg intra muscularly and in 24 hours the patient's blood pressure stabilized On each of the two days before operation 200 mg of cortisone intramuscularly and 40 units of ACTH intravenously were given



Figure 1 Poentgenog an demonstrating the fistulous t act be tween the storiach and the colon

At laparotomy the gastrocolic fistula was easily mobilized because there was almost no fibrous tissue reaction in either the bowel wall or the orientum. The repair was effected by closing the stomach and colon with transverse sutures using two layers of No 0000 silk.

During the operation and through the postoperative period until the patient's death her blood pressure was maintained above 100 mm Hg systolic only by the addition of levarterenol bitartrate to intravenous infusions. Blood volume and red cell mass deficit had been corrected prior to operation and postoper ative determinations were found to be within normal limits. The

patient responded from anesthesia but never returned to a responsive speaking state. She died suddenly after lapsing into shock and coma



F gure 2 Ro ntg gr m sh w g the d f ct the g t cur vature of the tomach.

The anatomic diagnoses at autopsy were (1) bilateral adrennal atrophy (2) generalized severe chronic dermatitis (3) status post repair of gastrocolic fistula with intact suture lines (4) being a ulcer lesser curvature of stomach (5) bilateral thromboses of the distal inferior radicals of the pulmonary arteries with multiple bilateral pulmonary infarcts (6) bronchopneumonia and (7) marked fatty degeneration of the liver

COMMENT

This case illustrates two of the more serious complications that may result from prolonged cortisone therapy namely peptic ulceration and adrenal atrophy out by Fraser and associates and Bakke may be associated with irroversible shock.

It may be further noted that this patient developed two gastric ulcers, one of which perforated and resulted in a gastrocolic fistula, apparently without any subjective signs or symptoms of gastrointestinal disease Her complaints were evidenced only after a gastrocolic fistula had occurred with resultant severe diarrhea and mild gastrointestinal distress

Possibly the euphoria associated with cortisone therapy played a part in her sense of well being

SUMMARY

During prolonged cortisone therapy a patient with psoriasis and psoriatic arthritis developed two gastric ulcerations One of the ulcers perforated resulting in a gastrocolic fistula The latter complication was made evident only after the sudden ap pearance of severe diarrhea without any previous signs or symp toms of gastrointestinal disease

In spite of cortisone, ACTH, leverterenol bitartrate, and ad junctive therapy, death occurred postoperatively in irreversible shock Postmortem examination revealed bilateral adrenal atrophy

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- 1 coctison therapy p t of ca J A. M. A. 150 31 Sept. 6 1952 3 Sue W G Dearig W H and Wollaege E E S us untoward ga tront thal manuf state s possibly related to dm trition of tone and cirtico-trop Proc Staff Meet. Mayo Clim. 28 641 649 No. 18 1953
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DECREASE IN MORTALITY OF RHEUMATIC FEVER

The mortality from rheumatic fever which has been decreasing for many years declined even more rapidly in the past decade. This recent improvement has been due in part to general betterment in environmental and living conditions and more particularly to the greater con trol over streptococcal infections with sulfa drugs penicillin and other antibiotics. The new therapy has been useful in preventing both initial and recurrent attacks of rheumatic fever

Intraoral Open Reduction of Fractured Edentulous Mandible

ROBERT BONDA Capt in, USAF (DC)

NE Of the prime concerns in the treatment of osseous fractures is satisfactory immobilization Immobilization of a fractured mandible in an edentulous patient sufficient to promote good bony union may not be easily established in some cases as in the one to be presented here additional in juries complicate the treatment plan Cranial injuries which in many cases are associated with facial trauma not only limit the selection of anesthetic and analgesic agents but also in crease the operative risk Multiplicity of facial injuries adds to the complexity of ascortaining the treatment of choice in the individual case

When it has been decided that an open reduction is indicated for a fracture of an edentifious mandible, the intraoral approach should be given consideration. It is advocated that this approach be used whosever possible in many cases it offers decided ad vantages over the extraoral approach. The factors to be considered in deciding the mode of access are (1) facial scarring (2) damage to facial blood vessels and motor nerves (3) possibility of increasing contamination at the fracture site (4) location and nature of fracture (5) ease of accessibility to fracture site, and (6) additional existing facial injuries.

Transossoous wiring in itself is not advocated as a sole means of immobilization it will retain the reduced segments in position but additional support is required Some form of intermaxillary fixation must be devised to ensure against displacement. This problem is minimized if a partial maxillary dentition exists however it becomes a major consideration in the edentulous patient. In the case to follow not only was the patient edentulous but his dentures the only registration we might have had of his normal intermaxillary relationship and mandibular contour were destroyed in the accident that caused his injuries. In such an instance the relationship must be established anew and maintained.

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The following review is presented because it is believed that many of the factors that complicate mandibular fractures exist in this case and because it demonstrates the application of the intraoral approach to an open reduction of a fracture involving an edentulous mandible

CASE REPORT

On 19 September 1953, the automobile in which a 24 year old airman was a pissenger was involved in a head on collision with a truck. The patient was removed from the wreckage in an unconscious state and taken to the nearest civilian hospital. His lacerations were sutured and he was transferred to this hospital by ambulance three hours following the accident

Physical examination at the time of admission disclosed a conscious, well oriented patient complaining of pain about the face and head. He appeared to have suffered a moderately severe concussion of the brain. The subsequent retrograde amnessa that was present concerned the five hours previous to and three hours following the accident Facial asymmetry was evident (fig. 1). There was no respiratory obstruction. Examination of the left external auditory meature offered evidence of blood and possible cerebrospinal fluid. Pupils reacted normally to light and accommodation. Blood pressure was 130/80 mm. Hg, pulse, 75, and respirations, 20

With the exception of abrasions of the knee, injuries were confined to the head and free Clinical examination, substan tated by radiographic studies, established the following diag noses (1) A compound, comminuted, depressed fracture of the right body of the mandible causing marked facial deformity Thorowas considerable comminution with a large triangular fragment of bone severed from the main segments and displaced inferiorly and laterally (figs 2 and 3) (2) A fractured, disarticulated left condyle of the mandible which was displaced forward and modilally (3) A fracture of the nasal bones without deformity (4) flight periorbital ecchymosis (5) Lacerations of the face and mucous membranes of the mouth in addition to the above listed facial injuries were a moderately severe concussion of the brain, and a possible basilar skull fracture

Intraoral examination revealed an edentilous mouth. The fracture of the right body of the mandible was compounded into the oral cavity causing a lacoration of the nucous mentions. The posterior segment was depressed medially and locited in a lingual relationship to the anterior segment. There was marked limitation of mandiblar movement. Although the patient could with some difficulty close his lips, he could not approximate his mandible to his maxilla Impressions taken at a later date were used to obtain study models which clearly showed the discrepancy in the contour of the mandibular ridge

The patient was kept at bed rest On the sixth day under local anesthesia the fracture site of the right body of the mandible was exposed by an intraoral approach and débrided Numerous detached chips of bone were removed The large triangular frag

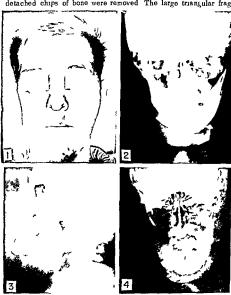


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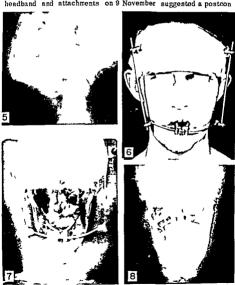
ment of bone which was reported on the radiographic examination was attached to the periosteum and therefore retained Using a No 41 bone bur and an electric engine, a hole was made through the body of the mandible on each side of the fracture site. The displaced segments were favorably positioned and maintained in their proper alinement by the insertion of a 25 gage, stainless steel interosseous wire. The mucous membrane was approximated and sutured with No 000 catgut.

Immediately following the closure, an impression of the man dible was taken with hydrocolloid, a stone model was made and an acrylic splint constructed with self curing acrylic While the splint was being prepared, circumferential wires were placed around the mandible A curved 20 gage, 21/ inch Luer needle was inserted into the floor of the mouth closely approximating the lingual cortical plate of the mandible, and continued until the point of the needle pierced the skin beneath the body of the man dible The wire was inserted through the needle and the needle was then removed This process was repeated on the buccal aspect of the mandible so that the wire encircled the mandible with both free ends remaining in the mouth One wire was positioned distal to the fracture site around the right body, one around the left body, and one around the symphysis menti As soon as the acrylic splint was delivered to the operating room, it was prepared for insertion into the mouth. The splint was then positioned and firmly attached to the mandible by the three cir cumferential wires The impinged soft tissues were freed to avoid dimpling of the skin and underlying tissues as the wire was being tightened intraorally. This was accomplished by following the wire with a No 11 scalpel blade up to the inferior border of the mandible The procedure was then completed and the patient returned to his bed. No attempt was made to reduce the fracture of the left condyle of the mandible (figs 4 and 5)

The problem was then to stabilize the mandible in this edentu lous patient An impression of the maxilla was obtained and a wax bite block made After attempting to establish reasonable vertical and centric positions, the wax block was processed in acrylic. The anterior portion of the block was relieved to facili tate feedings. Two brass rods were placed on the buccal aspect of the maxillary acrylic block so that they would protrude from the mouth, and in a position which permitted closure of the lips. A plaster headband was fashioned and so constructed that brass rods attached to it would stabilize the maxillary denture. The maxillary bite block and mandibular splint were sealed together with self curing acrylic and the splints secured to the headband. The fractured mandible was then immobilized (figs. 6 and. 7)

The patient was maintained in this position for a period of six weeks. His facial lacerations healed satisfactorily and the periorbital ecchymosis subsided. There was little displacement of the nasal bones making reduction unnecessary.

During his convalescence the patient complained of nausea and severe constant headaches in the occipital and nuchal regions Neurologic consultation and examination including an electroencephalogram taken following the removal of the plaster headband and attachments on 9 November suggested a postcon



Figu 5 Lt I bliq w f the mand bl d m t t g the t nd ct mf tial u to the mand b la pl nt po ito Fig pat nt th plat he dband nd att hmet F gwr 7 Po t oa t w f the k ll bor g the plat h dband tt hm t and pl

cussion syndrome Basilar skull fracture was not demonstrated radiographically On 17 November, after 60 days of hospital confinement, he was granted a convalescent leave The intraoral splint had been removed along with the headband and attachments on 9 November, following six weeks of immobilization His head aches had lessened and the facial injuries had healed without complications. There was no difficulty in randibular movement and, although the fractured condyle remained disarticulated from the fossa, the joint functioned without limitation.





Fig es 9 and 10 Appearance of the patient after completion of treatment

The patient was readmitted to the hospital on 10 December flis condition was satisfactory and the previous neurologic complaints no longer existed Radiographic studies demonstrated bony healing at the sites of fracture Under local anesthesia (15 December), an incision was made along the alveolar ridge on the right body of the mandible. The mucous membrane was reflected and the interosseous wire was removed. The mandible was tosted by exerting pressure at the symphysis and the angle, and no movement at the sites of fracture could be demonstrated. The mucosa was sutured with No 000 silk. Three days afterward, the sutures were removed and he was discharged from the hospital

The patient was observed and treated in the outpatient clinic for four months following his discharge During that time he was referred to the prosthetic department for dentures In March, treatment was considered completed and the patient was allowed to proceed to his next military assignment (figs 8, 9, and 10)

SUMMARY AND CONCLUSIONS

In many cases involving a fracture of the mandible an open reduction is indicated It is suggested that in the patient with an edentulous mandible the surgeon first consider an intraoral approach to the fracture site Some of the factors to be consider approximate the matter state of access are facial scarring damage to facial blood vessels and motor nerves possibility of increas into contamination at the fracture site location and nature of the fracture ease of accessibility to fracture site and additional facial injuries

It is my belief that in the case presented here the intraoral approach was the treatment of choice. Treatment of the patient was complicated by the fact that he had sustained additional injuries

Although there are several other accepted methods of treatment that may have produced equally desirable results it is proposed that the method here described be considered among the satis factors ones

FUNCTIONAL MOUTH PROTECTORS

In view of the fact that functional mouth protecters have been devel oped for some time it is surprising that they are not more popular among amateur athletes One of the reasons is the failure of the dental profession to educate the lasty concerning the absolute necessity of the u e of mouth protectors in contact sports. Another reason is that the technics used in their fabrication have made the cost prohibitive in the majority of cases A functional mouth protector not only lends protection to the oral cavity and associated structures but also minimizes the force of blows transmitted to the brain-blows which might lead to unconsciousness concussion with permanent or cumu lative injury to the brain and in extreme cases even to death

> -GEORGE WATTS D D S t 1 I wnal | Ame : D ! | A s cial on p 8 1 ly 1954

A New Method for Blood Carbon Monoxide Determinations

JAMES N WAGGONER Lieutenant (MC) USNR MARION L. PERNELL, B. S

AS PART of an investigation into aviation hazards con ducted at this naval air station, we were interested in measuring blood carbon monoxide (CO) levels. The major problem encountered was that of performing any sizable number of blood CO determinations,* and a definite need was seen to exist for some method whereby large numbers of blood CO analyses could be readily and accurately performed Numerous methods previously devised have met with varying degrees of success, but none has obtained the desired degree of accuracy Probably the favorite method of determination used today the volumetric method of Van Slyke, gives results which are con sidered to be within one percent of the true values. This test takes 20 minutes, however, and only one determination can be performed at a time

We believe that our method described below offers the best means yet proposed for performing blood CO determinations simply, inexpensively rapidly, and with a reasonable degree of accuracy

The series reported here covers 97 blood CO determinations for which values have been determined by this new method and checked for accuracy against the Van Slyke volumetric method

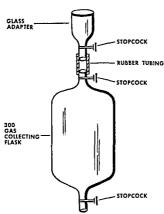
The results of these comparisons reveal that the answer obtained from the new method is within two percent of the value obtained by the Van Slyke method. The test takes only 10 min utes to complete and several determinations can be run simul taneously. We have performed six determinations together, and have invariably received the results within 25 minutes.

The cost of the necessary equipment and reagents is well under \$10 for 100 determinations. This compares favorably with the \$100 listed price for the Van Slyke equipment alone, and

the S1 250 purchase price of such instruments as the spectrophotometer

METHOD

The reagents used are 0 3 gram sapon n 0 8 gram potassium ferri cyanide 04 cc lactic acid and 03 cc captylic alcohol These materials are put into a clean dry beaker with distilled water in suf ficient quantity to make 100 cc. This solution is to be made up on the day during which determinations are to be made



Figur 1 Gas coll ct g flask for blood CO d term nat ons u thel adapter plee

- 1 All air is evacuated from a 300 cc gas sampling flask with stopcocks
- 2 With a glass adapter arranged on the flask as a dicated in figure 1 1 cc of whole blood (to which sodium citrate was added as an anticoagulant at the time the blood was drawn) is placed in the ad p-
- 3 Five cubic centimeters of the above-described solution is added to the adapter

- 4 With the bottom stopcock of the flask closed the stopcocks on the top of the flask and on the adapter are opened thus allowing the blood and solution to be drawn into the flask
 - 5 The top stopcock is closed and the adapter is removed
 - 6 The flash is shaken for five minutes
- 7 A carbon monoxide indicating tube for the detection of CO in air

TABLE 1 Convers on table fo carbon monoxide determinations by the method described in this eport

Reading obtained via CO-indicating tubes	Theoretic estimation of blood CO in percent of saturation
0 00	0 0
0 001	15
0 002	3 0
0 0025	3 8
0 004	60
0 005	7 5
0 008	12 0
0 01	15 0
0 02	30 0
0 04	60 0
0 05	75 0
0 066	100 0

- 8 Both stopcocks on the collecting flask are opened A rubber bulb accompanying each purchase of a CO indicating tube is attached to the tube and collapsed A finger placed over the air outlet of the rubber bulb will allow the bulb to slowly fill thus drawing air from the flask through the CO indicating tube
- 9 In the center of the indicating tube is a small yellow area which on exposure to various concentrations of CO gas changes shades through green to blue Because any CO in the blood was liberated into gas via the above method the air drawn through the indicating tube will change the color of the test area in the tube directly in proportion to the concentration of CO gas A color chart is provided with each set of CO indicating tubes purchased. The color of the tube is matched with the appropriate color on the colorimetric chart. The corresponding figure listed below each color on the chart is thus obtained.

10 This figure is converted to the final answer of percentage satura tion of CO in the blood by use of the simple conversion table given above (table 1) These figures were obtained by calculating the amount of blood present and the dilution factor of CO liberated from the blood into a flask containing 300 cc of air

SUMMARY

A new method for determining blood carbon monoxide levels described here is believed to be quicker more accurate, and less expensive than methods now in use It is hoped that if such a method is generally adopted its advantages will stimulate an increase in the number of blood CO determinations wherever personnel are exposed to the products of combustion or oxidation. Thus a greater degree of public safety may be attained

TO TELL OR NOT TO TELL

In all my experience no patient has ever asked me afterward whether the tumor was malignant or not Once in Dr Cushing s clinic when I was first getting experience in these things Dr Cushing had a pa tient who had been on the Yale football team when Cushing was there They were good friends Those were in the days of the flying wedge when playing football really took courage of no small order. This man was a star football player in those days. He was a big powerful driv ing sort of man who had been a big executive in a manufacturing plant He asked Dr Cushing Harvey I want to know what s the matter with me? Dr Cushing told him that he had a brain tumor and that he had to be operated on. He said All right After the operation he said to Dr Cushing in my presence How long do I have to live? I have to arrange my affairs. I have important commitments and I must know how to take care of them Cushing besitated a moment and told him Well from six months to a year. The man was sitting in a chair at the time he turned white as my roat and slid right down out of the chair and on the floor in a complete faint We had to pick him up to get him back to bed I remembered that experience and I decided that I would always lie to patients if they asked me

PROMOTIONS OF OFFICERS

The following officers of the military medical services on active duty in the Army, Navy and Air Force have recently received temporary promotions to the grade indicated

Medical Corps

Wall ce E Allen Capt. US's Thomas E. Atkinso J Condr USN Richard B Austin Lt. Col USA L wre c E. Banks Comd USN Norman L Barr Capt USA Edward L Beckman Comd USV D IV Boone Capt USN Erne t M Brall y Jr Lt Col USA Clement D Burrough Capt. USA Robert O Canada Jr Capt. USN M nl y J Capton J Comd USV F nk B. Clare Comdr USV Mr hall Cohen Capt. USA M Ik S Curtis Capt. USN Edward L DeWilto Comdr USN Do ald D Flicking r Bng. Gen. USAF Richard L Fun Capt USV Shirl y A. Fuh i g Capt. USA J m A. Grind Il Capt. USA Chil S. H scall J Capt US Lew L H yne Capt USN Bun O Junnil Capt USN Robert S. Kibl : Cord LSV

Everett P kuch Capt USN G eN Lam tlan USA John B M cG go Capt USV Robert H Mersho Capt USV Domaid T Miller Capt USV N holas M Muss Capt USN Charl s B N wto Cornar USN Emm tt F Norwood Capt. US' John R. Palmer J Comdr USV Ick TP moe Lt. Col. USA William H. P w H J May Ger USAF Lester J Pope Capt USA Fracs T Raff ty May USA Reginald R. Rambo Cool US's Jess F Richardson, Capt. USA William C. Robinso Corndy US's J hn S. Shaver Capt USV Edward F SI k Capt. USV Robert A. Stalt r Comet LS's John D Val ets Capt USV Dale B W tkins Coract USN Freder ck E W tz 1 Comdr USV No ma B Y wrish May LSA

Dental Corps

Cound H Br dt Capt. USN
Rosald C. Dov Capt. USN
Statl y W E t Capt. USN
Fra s W Hughes Condr USN
Go d a M Hun ck Capt. USN
Edmund E. J n e Capt. USN
Antho y k. K re Condr USN
Y yne F Larnabee Capt. USN
Y yne F Larnabee Capt. USN

D trR M Do ald Come USN
Domild T Marques Come USN
Edward V Noo Come USN
J m T Modler Capt. USN
Villiam D Oven Capt. USN
Joha V R dly Come USN
Dale B Ridgely Brig Gen. USA
Cha les E Rud lph Jr. Come USN
Ralph H Stowell Come USN
Wron G Turner Capt. USN

Veterinary Corps

Ev rett H. Ak as LL. Col. USA Vesl y A Cl m Jr LL. Col. USA

Medical Service Corps

Edward J A drs. J LL Col. USA Paul F Austr LL Col. USA

This n w f re. will pe monthly Li trag will be limited to pomoti as publ hed od rs add patche dated ubs q e tto 10 ct. 1934 — Editor

Medical Service Corps-Continued

Thom E Bk Lt Col USA

Ce ge A Bar on Comd' USN

H be F B rice Lt Col USA

B roard F Down I Comd' USN

Fl yid C Egg Lt Col USA

Leo P E ma Comd' USN

Thom M Fl yid, J Comd' USN

R bertl H ary Comd' USN

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G g A. L. J b Comd' USN

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J ha F Lod to Lt. Col. USA
Arther R M Alp ne Lt. C L USA
F sk J M ch II Comde USN
Em R No E Lt Col. USA
Em R No E Lt Col. USA
Em R No E Lt Col. USA
Thomas E Sh J Conde USN
George S S Comde USN
George S S Comde USN
Erw W W D Conde USN
Erw W W D Conde USN

Nurse Coms

Mar ha O Ay ck Lt Compdr USN An B Lt. Comdr USN Alma C B lianty Lt Comdr USN Agatha A B ra uska 1st Lt USA Th Ima R. Ba Lt. Comdr USN Eth I L Ba Lt Comdr USN L cy R Benj m Lt. Comdr USN Anal Bas Lt Comdr USN M ga t R B ry LL Comde USN Bard M Bl k Lt Comet USN R ta M Brochtt p Lt Comdr USN Alb ta S Burk Comd USN Gl dy V Bus y LL Comdr USN H 1E Cl k LL Comdr USN Rita D Cla k Lt. Comdr USN R th M Cobe Lt Comd USN
E E Co y Lt Comd USN
Nary E, Cren h w Lt Comd USN C lia M. Da Lt Comdr USN Carol L. Dunns g. Lt. Comdr USN Gl dy E Dvorak Comdr USN Ann M Eg Lt. Comdr USV N rma A. Ell go LL Corndr USA HI S.E ik Lt Comdr USV E lyn L Er k Lt Comdr USN
Thelma L F Lt Comdr USN Ro A Fl naga LL Comdr USN Dorothy M G 1 Lt. Comdr USA E ly D Gl y L1 Comdr USN M ry G sk LL Comdr USN May C. Grim Comdr USN Marca L H I y Comdr USA El M. H sto LL Comd USN Mary A. Harr goon, Lt. Comdr USA Edna P H H ! LL Comdr USN

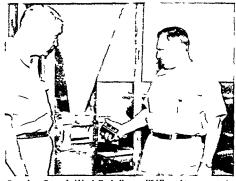
A Kowl Lt. Comdr USN CI L L mpp Comdr USN Mary M L gt Lt Comd USN
R H La g Lt Comd USN
L ara B L bma Lt Comd USN Fra L L d Lt Comet USN N y C. L. w LL Comdr USN El beth L Mull LL Comdr USN L all H. Mil ed Lt. Comdr USN Eva M Mink 1 Lt Comdr USN G trud H N 1 Comdr USN M ga t A N wat Lt. Comdr USN El zabeth O B Lt. Comdr USN L us B Ol Lt. Comdr USN М P ul er Lt. Comdr USN Fan FP Lt Comdr USN H I M Rhoad Lt. Comdr USN Julia M Sagaw Lt. Comdr USN H 1 S mo k Lt Comdr USN Lur M Sad Lt Comdr USN El be h B S idl Lt. Comdr USN Agn G Shur Lt. Comdr USY Cath I Sm h Lt Gomde USN Vug m F Sp g LL Comdr USN Las Sea Lt. Comdr USN Lillia S wat LL Comebr USN N ma V S kl LL Comdr USN Edma L T w d LL Comdr USN V 1 ra C. V ubel Lt. Comdr USN Mazj E V aStesa L.L. Comdr USN N may I W 11 Lt. Comd USN Kathry E. William Lt. Comdr USN Don A Vilso Lt. Comdr USV Mary L T ligges Lt. Comd USN Woodall Lt. Comet USN

Homen s Medical Specialist Corps

Joa A Barn Copt. USA H Hirama Copt. USA Eleano A. L. Capt. USA

AIR FORCE BASE IN PUERTO RICO IS FIRST TO USE FLUORIDATION OF DRINKING WATER

Fluoridation of drinking water at Ramey Air Force Base Puerto Rico was initiated on 28 September 1954 largely through the efforts of Colonel Carlos F Schuessler USAF (DC) base dental surgeon Ramey is the first Air Force installation authorized to add fluorides to its water supply



Brigadier General Alfred F Kalberer USAF right presses the cont of that in tuates fluoridat on at Ramey Air Force Base Puerto Ricco ubich be commands The program was insugurated by Colonel Carlos F Schuessler USAF (DC) left base dental su geon

Following a survey of the 2 500 children at the air base in September 1952 which revealed a higher incidence of dental caries than the average in the United States action was initiated by Colonel Schwessler to obtain authorization for fluoridation. The initial installation of fluoridation equipment was accomplished for about \$3 000 and the yearly maintenance cost is expected to be \$200

Recent research investigations have shown that decay of teeth in the younger age groups can be reduced by drinking water to which fluorides have been added. Col Schwessler stated. It is expected that continuing research and education will encourage civic agencies to recognize the importance of fluoridation. This will aid military bases in obtaining the necessary equipment and fluorides for treating their water supply.

Medicine, The Learning Profession

The Hippocratic Oath reminds us to hand on precepts lectures and all other learning to my sons to those of my master and to those pupils duly apprenticed and sworn

The tradition of teaching has always been inherent in the practice of medicine and today almost every physician does some "teaching be it advice to an intern seeing his private patient or the more formal medical school lecture in essence all professional discussion between physicians is a mutual learning and teaching and this self propagation of knowledge is the fundamental basis of the rapid growth and development of modern medicine

A characteristically American contribution to the technics of medical education is the familiar CPC These exercises in diagnostic acumen were founded by Richard Cabot at Harvard about 50 years ago From clinical therapeutic case discussions they developed into the present-day valuable correlation of clinical laboratory and pathologic knowledge

Here is the answer to the cry that laboratory men are drifting away from the bedside clinician. Here in proper form is brought the combined experience of all variants of the biosciences. When the clinicopathologic conference is not a trick perpetrated on the hapless clinician by the omniscient pathologist but rather a challenging clinical problem solved by the correlation of laboratory and necropsy observations the Cabot Clinics, are without equal as teaching experiences.

With this issue the U.S. Armed Forces Medical Journal will present a CPC each month as held in an Army Navy or Air Force Hospital We invite your attention to these examples of the application of the best in current medical thinling brought to bear on our ultimate goal—the diagnosis and treatment of the patient.

Hed cine to produce bealth has to exam ne disease
--PLUTARCH

The more ue study the more ue discover o rig orance
—SHELLEY

A MESSAGE FROM THE A M A

Some of the results of the most recent opinion survey conducted by the Council on National Defense of the American Medical Association arong physicians released from active military duty appeared in the December issue of the Journal The remainder are summarized here Of the 1,948 opinion question naires sent out during the six months covered by the survey 1,600 were completed and returned to the Council

Reserve status Most physicians (1 037) indicated they retained a reserve commission. The percentage of retentions was highest in the Navy lowest in the Army

Distribution by rank at time of discharge. The majority (62.6 percent) of physicians held the rank of first lieutenant or lieutenant junior grade. 33.6 percent held the rank of captain or lieutenant senior grade and 3.8 percent held the rank of major or lieutenant commander or higher.

In a breakdown by branch of service the Navy had the largest percent age of officers in the lowest rank showing 90 percent as lieutenants junior grade 77 percent as lieutenants senior grade and less than three percent as lieutenant commanders or higher In the Army 56 percent were first lieutenants 373 percent were captains and 67 percent were majors or higher in the Air Force 40 6 percent were first lieutenants 57 percent were captains and 24 percent were majors or higher

Government paid medical education A total of 1 244 indicated they had received educational assistance from the Federal Government The Navy V 12 program accounted for 569 of these 540 participated in the Army Specialized Training Program 124 received training under the G I Bill through the Veterans Administration and a few listed a combination of various programs

Training received in service. Of those replying to this question, 460 who had served in the Army 186 in the Air Force and 166 in the Navy stated that they had received additional training or experience in service schools. The majority of Army officers mentioned the Basic Course Medical Field Service School. Air Force and Navy officers indicated the School of Aviation Medicine.

Evaluation of medical military training. The majority of the 1 292 answering this question believed that no important feature of military medicine had been omitted. Basic orientation and indoctrination was stated by 119 to be inadequate bowever and 73 thought that more in-

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struction in military customs administration regulation et cetera was desirable. A small number listed several other areas of insufficient training

Evaluation of assignment A large majority of the physicians (765 percent in the Army 773 percent in the Navy and 833 percent in the Art Force) though: they were properly assigned In addition 698 percent in the Army 719 percent in the Navy and 737 percent in the Art Force expressed satisfaction with bravy and 737 percent in the Art Force expressed satisfaction with brave assignments

Assignments One of the questions was designed to determine the amount of time spent by physicians on various types of assignments Because of incomplete returns only the amount of time spent on the treatment of military personnel and their dependents in the United States and overseas is reported Replies showed that at domestic duty stations 38 44 percent of time was spent on military personnel and 28 67 percent on their dependents o creases 27 79 percent of time was pent on milit by personnel and 8 4 percent on their dependents

Types of nonmilitary medical care. The type of medical care most of ten performed by medical officers of all three services for nonmilitary persons was outpatient care. Surgery was third in the order of frequency

Duties that co. Id have be n perfor ed acequately by othe person iel. Of the 1437 physicians answering this question 672 stated that their duties could not have be n performed adequately by any other personnel. The 765 (53.2 percent) who believed otherwise listed ther pr sonnel or civilian personnel in that order of frequency as capable of performing their duties. A smill number indicated nurses and enlisted personnel.

Evaluation of staffing conditions The great majority of answers indicated that staffing conditions to all classes of medical personnel (physicians dentists nurses enlisted personnel et cetera) were considered adequate Significantly 180 in the Navy indicated overstaffing 47 under taffing and 193 adequate staffing In the Air Force 220 reported overstaffing 46 understaffing and 177 adequate staffing In the Airmy 196 noted overstaffing 135 understaffine, and 329 adequate staffine

Physicians ubo usual voluntarily remain in service. Of the responses to the question. Under what conditions would you have been willing to serve beyond the required two years. 282 percent stated they would not serve over two years under any conditions and 662 percent indicated a number of reasons for which they would serve an additional period. A small percentage (5 6) did not reply to the question.

If copies of the complete results of this survey are desired address your request to the Secretary Council on National Defense American Medical Association 535 N Dearborn St. Chicago Ili

OFFICIAL DECORATIONS

LEGION OF MERIT

Frank O Alexander Col MC USA
Eli beth T Hann Lt Col. ANC USA
Vinnie H I ffr ss Col. MC USA

WitrH Matuska Col MC USA Harold S McBurn y Col MC USA Wend II A Wile Col MC USA

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Rob IT C. R ed Capt MC USA
Evelya L Russ I May ANC USA
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Arm ad A Wallack Ist LI MC USA
William M. 2011ma Jr 181 LI MSC USA

COMMENDATION RIBBON

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Paul Le Capt MSC USA] m s D Loveless 2d Lt MSC USA J mes E Mass y J 1st Lt MSC USA Leon S M zistrano Ist Lt. MSC. USA Mary R M Ison 1st Lt MC USA Robert A Pron Ist Lt MC USA Rich rd E Raab 1st LI MSC USA Ham It n W R tledge Capt MC USA Mario G R 2d Lt MC USA Wiley L Roberts Capt MSC USA Al c R th Capt ANC USA Da d H Schelley Ist LL. MSC USA Jh J Schwab Capt MC USA Edmund L Sherwood Capt MC USA Je n W S det 1 t Lt MC USA Harry T Stradf rd Comdr (MC) USN Eliz beth R Thorn 1st Lt ANC USA G na Trytt n, Capt. ANC USA William W T cket Capt MC USA William G W lker Jr Ist Lt MC USA Helen G Ward Capt ANC USA Glenn R Web tr Capt MSC USA James P Th tremor Capt MC USA

The mm s of offer of the med cals ivecs who have been aw ided decorations by the United Sites Army N vy or Air Fice are p blish d in this department each on the following received is format on from office als wices —Edder

REGULAR DENTAL CORPS OFFICERS CERTIFIED BY SPECIALTY BOARDS

Since 1930 seven specialty boards have been established with the approval of the American Dental Association to grant certification to qualified dentists Of these the American Board of Orthodontics was activated first and is the largest Second in size is the American Board of Oral Surgery which was founded in 1946

Regular Dental Corps officers of the military services have been certified by the following boards

American Board of Orthodontics

WII m H D v C L USA

American Board of Periodontology

 J pb L B
 C I USA
 Ene H M
 LI C L USA

 H A Bary baw LI C I USA
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American Board of Oral Pathology

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THE MEDICAL OFFICER WRITES

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Reviews of Recent Books

PRINCIPLES AND PRACTICE OF ANTIBIOTIC THERAPY by Henry Welch Specially edited by Felix Marti Ibañez 699 pages Published by Med ical Encyclopedia Inc Distributed by The Blakiston Co New York N Y 1954 Price \$12

This outstanding book presents in a remarkably fine manner the latest and best of the historical chemical and pharmacological information concerning each antibiotic useful in clinical practice. It is composed of three parts. The first describes the isolation and development of the useful antibiotics thus affording splendid back ground material for a comprehensive discussion of the important ones and a dissertation on synergism antagonism and hornesis as it per tains to antimicrobial substances. Part II discusses antibiotic therapy of infectious diseases which are properly grouped and are discussed by outstanding authorities in their respective fields. Part III is entitled. Antibiotic Therapy in Medical Specialties. and covers oph thalmology pediatrics oral surgery and dentistry.

The organization of the book and its bibliographies and index are well done. The volume is one of the finest in this field that has been written in recent years. It seems impossible that a 700 page book could be so up-to-the minute the manuscripts of the author and collaborators appear to have been current up to November 1953. This accomplishment in editing and publishing has resulted in the inclusion of all new antibiotics of interest to the clinician.

I strongly recommend this book for medical libraries and clinicians

—WILBUR C. BERRY Col MC USA

FUNDAMENTALS OF INTERNAL MEDICINE by Wallace Mason Yater M D
M S with the assistance of William F a cis Olive M D 4th edition
1 276 pages illustrated Appleton Century Crofts Inc New York
N Y 1954 Price \$13 50

In this new edition of a well known textbook of medicine the author and his fellow contributors accomplished remarkably well their purpose of the presentation of the fundamentals of internal medicine in a simple concise yet comprehensive form. Thus in this one volume will be found the essentials of medical practice exclusive of surgery obstetrics, and the limited specialities.

The various diseases are presented by systems in 20 sections in cluding ones on diseases of the skin the ear and the eye which usually are not found in a textbook of medicine Sux additional sections include those on dieteries antibiories and sulfonamide com-

pounds symptomatic and supportive treatment inhalational therapy useful tables and the physician himself Frequently throughout the text pertinent points are summarized for emphasis. The illustra photographs charts and tables are excellent and surabl references are given at the end of each section

Although this book is evidently written primarily for medical students because of its conciseness interns tesidents and practit prets will find it beloful and a timesover

-PATRICK I N SHANE C I MC HSA

THE DIAGNOSIS AND TREATMENT OF CONVULSIVE DISORDERS IN CHILDREN by 8 miles L g f n, M D 320 p ge 92 llustrat Ch 1 C Thoma Publ her Sp ngf id III 1954. P \$9 50

This new monograph nitended pr marily for the gener 1 practitioner of medicine is based on the combined clinical and electroencenhalo graphic studies of over 4 000 children with convulsi e disorders ob served in the epilepsy clin c of the Johns Hopkins Hospital The vari ous types and causes of convulsi e disorders at de cribed and the dif ferenti I diagnosis and treatment discussed in detail. Emphasis is gi. n to epileps) as the chief offender in the poduction of the convulsive state In the chapter on drug therapy ant convulsant drugs are de ser bed with recommendations as to their usage in various types of conditions dosage and possible untoward r acti n

The di cussion of detary treatment is interesting though cintro versi ! Some other observers ar less enthus; st c than the author re garding the value of the ketogenic det in certain types of epilepsy The section on electroencephalography is well done but would se m to be of less value to the a er ge general practit oner than most of the other material offered Of p rescular interest is the detailed disc ssion of febrile convulsions s well as the section de ling with the tre t ment of the child during an actual convulsion. A chapter on the surgical treatment of epilep y is excellent

The bo k s beautifully organized and is printed a th easily readable type. The ubject matter is presented in an orderly cohesive and interesting m nner Each chapter concludes with a extensive b bling raphy nd there is n excellent author and subject index. This book is highly recommended to all who are confronted with the complex problem of convuls as in children - THOMAS L DUFFY Comd (MC) USV ANATOMY OF THE BRONCHOVASCULAR SYSTEM by G g L B b um

N D 300 pag Il trat d Th Y B k P bl h

The author e press d a his original purpose the preparation of an atlas with line dr wing of normal and abn irral patterns of the pul mon ry vascular sy tem In order to cover the field thoroughly he h s written a book on the urgical anatomy of the bronchovascular system with presentation of the ign ficant aspect of embryology anatomy parholo, a cardiology and exper mental and clinical surgery

The volume contains a comprehensive review of the literature with numerous references and quorations throughout the text. The author has cited anomalies in detail with representative drawings of various abnormalities and included a number of case histories. Significant aspects of experimental and clinical surgery are discussed and important operations are outlined in detail.

The book is indexed and vell organized and the illustrations are made up of drawings and photographs almost entirely in black and white There is an excellent bibliography Because the author has quoted widely from the literature and presented the views of many observers not everyone will agree with all of his conclusions. Nevertheless this book will be valuable because of the large amount of important information contained on the developments in thoracic surgery.

-CAPL W HUGHES Lt Col MC USA

THE AMERICAN TEXTBOOK OF OPERATIVE DENTISTRY edited by Arthur B. Gabel M A D D S 9th edition 626 pages with 422 illustrations Lea & Febige Philadelphia Pa 1954 Price \$10

Maintaining the high standards of the previous editions the contributors to this textbook who are outstanding leaders in their respective fields present a critical survey of the most recent developments in operative dentistry. Due stress has been placed on the mechanical approach to operative procedures a phase many practitioners often treat lightly. The author's discussion of this subject is basic and is presented in a clear concise manner. Various biologic aspects are correlated with proper emphasis.

The section found in previous editions on Dentistry for Children has been omitted because of the editor's belief that the present scope of this specialty includes not only operative procedures but also numer ous other related services. The discussion of operative dentistry from a diagnostic standpoint is well conceived and can be summed up by the following quotation. The evaluation of the extent to which dental disease may influence the health of a patient is one of the most serious responsibilities of the dental profession.

The style organization and format are appealing not only to the student but also to the teacher and general practitioner. The 422 illustrations are nearly prepared and are thoroughly explained. The index of fers quick reference. The bibliographies and the list for supplementary reading afford access to many better known texts and much research data, which is in keeping with the thoroughness of the authors.

Operative dentistry may be justly considered the first line of defense against most dental diseases and their sequelae though in discharging his professional obligations the dentist must have more than a know ledge of his immediate field. This text affords the student and practitioner an excellent opportunity to better serve his patient and profession—EDWARD R HILDRETH Comd (DC) USY

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CORONARY HEART DISEASE IN YOUNG ADULTS by M ad M. G tl
M D d P ul D Wbt M D 218 page illustrated Harva d
Uni s ty P Cambridg M 1954 P ce \$5

This book describes an exhaustive study of 100 patients with cor onary occlusion all less than 40 years old The study was made by a group of investigators each of whom had a different approch to the problem A matched control group of equal size and a larger unmatched control group also were studied The controls appear to have been selected to approach the patients as nearly as possible in a number of character stics. The main spheres of investigation centered in clinic 1 appearsal family incidence and reach background arthropometric and morphologic appraisal athletic activity and occupations findings on masculinity endocrine and biochemical findings dietary factors and the oxidation-reduction potentials of saliva.

The signific nt evidence which emerged from this three year study supported the original thesis of the group namely that coronary heart disease is caused by various factors rather than by one critical variation from the normal It indicates that a consideration of sex body build morphologic characteristics heredity serum total cholesterol serum uric acid the ratio of serum to I cholesterol to serum lipid phosphorus an index derived from the relation of serum uric acid serum control cholesterol and serum lipid phosphorus and the salivary redox potential should result in the selection of coronary prone persons It seems unlikely that any one factor will accurately delineate this group

The authors have been wise in not attempting to extend their study into the field of therapeutics. The discussions of theories of the cause of athero electosis are sufficient to point up the investigation being reported but are not overly detailed. As a result, the reader is carried without diversion to the final evaluation of the results.

The graphs and tables are clear and summarize well an enormous mass of data References appear after each chapter and the index is ad equate

Thus type of publication is of great value at a time when the number of articles published on the subject exceeds the reading capacity of the average physician. It is of value also because of the wide selection of experts in varied fields — PARLPH C PARLER J — Capl. (MC) USN

ANESTHESIA IN GENERAL PRACTICE by Staze t C C !! M D 4th d too 312 pag | Hustra d Th Ye Book P blish I Ch cago III 1954 P \$5

The original intent of the author of this book was to make available to the medical student and part time anesthesia a practical text on anesthesia. The fact that there have been four editions in 8 years—with the second edition be ng reprinted twice and the third edition occurred the second edition be ng reprinted twice and the third edition occurred the second edition be not reprinted twice.

All the usual phases of anesthesia practice are discussed in a dogmatic and practical fashion. The text may be read and understood by the general practitioner but the specialist may find it elementary. Multiple technics are not included not are detailed discussions of minor facts of anesthesia. The present edition has brought the material up to date. This book is highly recommended for medical students and beginning anesthesiology residents as a text to read and study. It should be added to the medical library of each teaching institution.

LYLE AND JACKSON'S PRACTICAL ORTHOPTICS IN THE TREATMENT OF SQUINT (And Other Anomalies of Binocular Vision) 4th edition revised by T Keilb Lyle M D M Chir assisted by Varianne Walker D B O (T) 371 pages 195 illustrations including 3 colored plates The Blakiston Co Inc Philadelphia Pa 1953 Price \$12

This book contains a general discussion of strabismus with emphasis on orthoptic training. The theoretical precepts are based on the writings of Chavasse Various orthoptic devices are described in sufficient detail to permit practical application with emphasis on those used in the office rather than on the home training methods. Both surgery and orthoptic training is used in the treatment of squint. A particularly noteworthy chapter deals with the treatment of paralytic squint and contains a very complete and lucid description of the methods of diagnosis. The style of the book is somewhat heavy and requires considerable concentration to read however the explanatory diagrams are exceedingly well done. There are 60 references. It is believed that the book is very valuable for both ophthalmologists and orthoptic technicians. —10HY E EDWARDS IL Col. MC USA.

LEGAL MEDICINE edited by R B H G adwohl M D Sc D I 093 pages 222 illustrations The C V Mosby Co St Louis Mo 1954 Price \$20

This excellent volume is one of the very few that portrays completely the relationship between medicine and law. The subject matter is complete and modern and the data based on current legal statutes is exact trustworthy and reliable. The editor who is also the author of four chapters had the collaboration of 29 outstanding experts in forensic science and all facets of the subject are well planned. Considering the breadth of medical jurisprudence today the authors have presented their collected thoughts in a remarkable manner and have contributed greatly to the subject of forensic medicine. The reader is thus enabled to better understand this new and exact science.

The text is divided into 39 chapters all are necessary to fulfill the editor's mission and there is little or no overlapping. The style format and organization of subject matter are excellent. The 222 well selected illustrations are of outstanding quality. Each chapter is well referenced and the book is beautifully indexed.

This text will prove of value to all physicians regardless of their specialties and particularly to those who may be called to testify

in court. This book will also be valuable to students, law enforcement officers criminologists and to most members of the legal profession interested in the subject. This volume should be in the library of every practicing pathologist and scientist working in toxicology

-RALPH M. THOMPSON C 1 USAF (MC)

OFFICE GYNECOLOGY by J P G bill M D F A C S 6th dt 517 p ge llustr t d The Ye Book P bl b I Chr go Ill 1954 Pric \$7.75

The sixth edition of this book written by an authoritative practicing gynecologist is directed to the general practitioner but also purports to provide the gynecologist with a ready source of all he should know concerning the practice of gynecology in an office or outpatient surgery Although several new chapters have been added this edition still f lls considerably short of the author's goal M ny subjects such as sterility endocrinology menstrual irregularities pelvic inflammatory disease hysterosalpi gography a d merotubal in ufflation are tre ted super ficially Emphasis given less important subjects such as mechanical concept on control

The conv reational style has continuity but the organization of the subject matter is poor An example of this s the inclusion of a new chapter on diseases of the vulv while discussions of specific dis e ses of the vulva such as condyloma acuminatum pruritus vul ae and kraurosis vulvae tem in in isolated chapters. The few illustrations in several instances are chosen from commercial sources. They little to the clarity or completeness of the presentation. The index is adequate. The absence of a bibliography limits the book's usefulness as a reference

This volume can be re d with advant ge by the general practition r but probably will prove to be inadequate for him as a reference on office gynecology It will have relatively less value for most gynecologists -DUIGHT A CALLAGAN Cond IMCLESY

PSYCHOMOTOR ASPECTS OF MENTAL DISEASE by H E & g Ph. D

185 pg ill strt d Havad U i sty P 1954 Pc \$350

This book presents the details of systematic observations of one phase of psychomotor activity which are of interest in the considera tion of psychomotility in mental disease. It is very adequately implemented with 21 figures 21 tables a subject index and an appendix commaining the clinical h story forms and the rating scales used and the wring diagr ms of the test pp ratus

The objective in this experiment was to test more thoroughly the e istence of possible relation between psychomotor function and be havior disorder and to examine in greater detail any positi e trends which might emerge. The subjects tested included a group of p tients with a chroni mental disease (schizophienics) a group with subacute mental disea (pseudoneurotic schizophrenics and neurotics) and a group without disease. The author describes in considerable detail how groups were selected for the study and also the test procedures. The focus of the study is on fine movement (hand and finger actions) but gross movements are included in the observations of psychomotor activities by subjects with mental disorders. He includes the only broad review of the experimental literature related to this topic citing 142 references.

The data recorded in this experiment offer a clear demonstration of defective fine psychomotor performance in patients with a behavior disorder and a direct relationship of considerable subtlety between peed in fine psychomotor performance and the degree of disorder present. There are indications that the psychomotor defect appears to increase with the experiment of the degrees PICCESS.

ent There are indications that the psychomotor defect appears to increase with the severity of the disease process.

This volume should be of interest to psychologists psychiatrists neurologists and neurophysiologists.

-- PHILLIP B SWITH LE Col MC USA

NEW AND NONOFFICIAL REMEDIES Containing Descriptions of the Articles which Stand Accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1 1954 Issued Under the Direction and Supervision of the Council on Pharmacy and Chemistry American Medical Association 609 pages Illustrated J B Lippincott Co Philadelphia Pa 1954 Price \$2.65

This well known book is published annually. The primary objective of the Council appointed by the Board of Trustees of the American Medical Association to consider medicinal and allied preparations offered for prophylactic diagnostic or therapeutic use by the physician is to encourage the practice of rational therapeutics. As in the past, the drugs accepted for inclusion in the book are arranged according to pharmacologic action. There are 24 separate sections of drugs so arranged A typical monograph for a drug includes the chemical or official name the commercially available preparations of the drug the strength and potency forms in which available and the pharmaceutical houses manufacturing the item. There is also a short description of the drug with its actions uses and dosage.

The first portion of the book contains such information as official rules governing admission of drugs criteria for the evaluation of cer tain products labeling requirements decisions of the Council that may be of general interest and a table of metric doses with approximate apothecary equivalents. An innovation is the publication of lists of drugs omitted and of new drugs added since the previous edition. The section entitled Bibliography of Unaccepted Products" was omitted from this edition. The book continues to contain an index to distributors of accepted items and a complete general index.

This book provides the physician with such information concerning the actions usage limitations and dosage of acceptable and relatively new drugs as will promote the practice of rational therapeurics 142

THE DIAGNOSIS AND TREATMENT OF THE INFERTILE FEMALE by F d A S mm ns M. D 83 pag Hust at d Ch 1 C Thomas Publi hr Sp gf ld Ill 1954 P c \$2 50

This concise monograph dealing with the problems encountered in di gnosin, and tre ting conditions producing infertility in the female is divided into 20 chapters and contains 83 pages with seven figures and three tables. The author's style provides effortless reading and he has included only important and necessary steps in the systematic approach to problems of sterrlity

The chapters devoted to dagnosis are complete and emphasize the need for a preconceived plan of action to be followed by the examiner in his quest for the cause of infertility in each and every pa tient Likewise the sections devoted to treatment are adequate—they contain the most modern think ng on the subject and properly caution the reader regarding the antic pated low salvage in cases stemming from endocri e deficienci s other than thyroid

The chapters on artificial insemination and adoption contain much useful and important information stating the problem unequivocally and with d spatch.

The last chapter tresents the more important psychosomatic causes of infertility

This small well written monograph will be of particular value to the student and general practitioner but will prove a ready source of reference for the specialist in obstetrics and expeculogy it rightfully belongs in the 1 braries of all physicians treating sterility of the female patient - WILLIAMS BAKER I Comb (NC) USV

CLINICAL ROENTGENOLOGY V 1 me II The H d h ck d Speal Col ma by Alfred A de Lor mer M D H nav G Moebr ng M D nd J b R H nan, M D 468 pag 734 ill trat Charle C Thoma P bi h r Sp ngf ld III 1954 P \$1850

This monograph is volume 2 of a four-volume set and covers the clinical roentgenology of the head neck and spinal column These divisions of the body are discussed through multiple clinical entities found by practicing roemgenologists. This is a rather unusual method of classification because of the possibility of omission however the authors have succeeded admirably in co ering the field by including all of the most common lesions encountered in these sections of the body. The anatomic and roentgenologic findings are well correlated with the clinical evidence of abnormality

There are excellent sections on the use of contrast m terral angiography encephalography and ventriculography Of special note is a large section on demal radiography and diagnosis not duplicated elsewhere

Each sect on is brief to the point and well organized Each subject is discussed under specific headings such as general considerations

roentgen manifestations, clinical manifestations laboratory co-operation and differential considerations. Pertinent references are included. The volume is fully and beautifully illustrated with excellent examples of the subject matter. From a technical standpoint these include some of the finest cuts of radiographs that the reviewer has seen. The book is adequately indexed to permit easy reference to any particular problem.

The authors are to be congratulated on such an excellent presentation. This volume is a welcome addition to any medical library as an excellent reference for either specialist or novice.

-SYLVESTER F WILLIAMS Capt (MC) USN

TEACHING IN THE OUTPATIENT DEPARTMENT by Siste May Isadore Lennon R. N M A 240 pages illustrated G P Putnam's Sons New York N Y 1954 Pitce \$4.

This book on outpatient department reaching is divided into four major units concepts basic to outpatient department work education program integration of social and health aspects and evaluation of the teaching program. The appendixes deal with family studies budgets well child conferences and the qualifications and duties of outpatient department personnel. Of the 42 illustrations those representing interrelationships of outpatient divisions records of patient care and records of student experience and evaluation are good. Perhaps some of the photographs could be clearer from the standpoint of subject matter and technic.

Sources of related visual aid materials are presented with most of the sections. At the end of each subsection there is a time saving terminology list References are numerous and timely about one third of them dated 1950 or later. One error in terminology appears in the section on injection technic for the diabetic patient where sterilize" is used in relation to directions for surgically cleansing the skin

To administrators the author offers the challenge of further improving understanding between hospital and community agencies regarding their co operative furctions in caring for the sick. Her point of view as practitioner as well as scholar embraces the care of the entire patient with all his needs the full development of the student nurse and the team concept of personnel relationships.

-LILLIAN B SCHOONOVER LI (NC) USN

ANATOMY FOR SURGEONS VOLUME I THE HEAD AND NECK by W. Herry Hollinsbead Ph D 560 pages 326 illustrations Paul B Hoeber Inc. New York N Y 1954 Price \$12

This volume deals with the regional anatomy of the head and neck for the practicing surgeon and is not a complete descriptive anatomic text. It is intended as a review of basic anatomy and as a refresher of those details necessary for the mature surgeon. These objectives are admirably accomplished.

144

The book is divided into nine sections on the cranium orbit earnose and paran sal sinuses fascia nd fascial spaces of the head and neck face laws palate and tongue pharynx and larynx and neck In each section the subject matter is well organized and covers the essential anatomic principles. Also-and this is what makes the book especially valuable to the surgeon-the major anomalies and varia tions are given embryologic physiologic and neurophysiologic corre lations are presented and recent an tomic and clinical work is included The operative approaches to various regions and the position of those structures easily injured during operations is well presented The presentation throughout is from the standpoint of the operating surgeon

The illustrations are simple and clear. There is a bibliography of appropriate references at the end of each section and the index is ad equate

This book is well named and is truly a clinical surgical anatomy. It should prove a welcome companion for the operating surgeon and is highly recommended for surgical residents and especially for general surgeons - JOSEPH J ZUSKA, Capt (MC) USN

LABORATORY AIDS IN ENDOCRINE DIAGNOSIS by R b t F E M D Ame ca L ctur Se P bl cat N mb 212 A M graph Th B t D son f Am L ct Edit d by W llad O Th mp M D 131 page Il trat d Charl C Th ma P bl h Sp gf eld Ill 1954 P \$475

This is a short b t useful text covering the laboratory methods that frequently aid in the diagnosis and treatment of endocrinop thies. As the author points out these technics are for the most part only aids or adjuncts in di eno is and in following the effects of the treatment of endocrine diseases. Information concerning such diseases that can be obtained from the us al labor tory tests is reviewed. The technics and critiques of the various special metabolic studies wine hormone tests special tests of blood sperm counts testicular biopsies vaginal smears and roentgenographic examinations are well presented The endocrine disease index in the final chapter should prove most useful to interns residents and all physicians who see patients with endocrine disorders ROBERT F BLOUNT COL MC USA

DISEASES OF THE SKIN by Ol S Orm by M D d H m lt gom ry M D M S 8th dt n thor ghly sed 1503 p ge with 666 fg re ta g 750 llu tr to d 18 lored llustr tous on 11 pl t L & F b ge Phil delph a P 1954 P \$22

This I test revision of an outstanding standard text and complete reference source should be available to all medical libraries and owned by all doctors interested in skin diseases. The bulk of the book makes it cumbersome to read but the te t is concise and the subjects are well indexed

The sweetin features of the older editions it et histopathology and multiple clear illustrations have been retained with necessary revisions. The sections on physiology chemistry and diseases of the sweat glands are markedly improved and demonstrate the great changes in basic sciences since the previous edition. The section on syphilology has been reduced in scope but is adequate for today a needs. Nelson's treponemal immobilization test for the diagnosis of syphilis however is not adequately described nor are its uses explained. Pigmentation and the diseases associated with it are newly included with the latest treatments. Extensive additions are noted on two hitherto fatal diseases pemphigus and lupus crythemitosus with emphasis on the newest diagnostic tests. The portion concerning mycology is of general interest of all physicians and includes the latest laboratory work on this difficult subject.

This book represents a magnificent monument to the late senior author — EDWARD F GUDGEL Maj MC USA

PRACTICAL FLUID THERAPY IN PEDIATRICS by Fontaine 5 Hill M 19 275 pages illustrated W B Saunders Co Phila lelphia, 1 a 1954 Price \$6.

This book was evidently written for clinician who have not kept abreast with the current literature concerning fluid and electrolyte balance in the human body and in particular for the ephysicians concerned with the treatment of infants and children. The elementary principles of the physiology of water and electrolyte in the human body are presented in the first section. The bedwide application of these principles for various clinical conditions with considerable repetition for the purpose of emphasis a discussed in the necessity section of the book.

The third and shortest section of the look is devoted to terchnice of obtaining blood specimen from and administering a retireful fluids to infants and young children. These terchnice are suitable is listing to the section of the s

THE PAINFUL PHANTOM Psychology (1) servey, and (seathers, 1)
Law ence C Kolb M D 0 page (2) 11 a 1 11 s.a., 1, 1 italia,
Springfield III 1954 Price \$1.00

The first section of this monograph is desired in a desiriant of the phantom phenomena and the second entire to easy fill thatper, and a surmary of existing therein and distributed that the first of the physiology of the pariful phantom

The author provides evidence to influsive the interval of a nonpainful phantom is a health of profession to a fellicity any amputation of a limb or offer they face it as a feet at all the second of the second of

tation the psychologically healthy person slowly reorganizes his body image by means of the new sensory experiences related to the changed body form and the phantom gradually disappears. It may persist or reappear if a physical defect irritating the afferent nerves is present. Its persistence in the absence of an organic factor and the failure of the limb amputee to make the necessary psychologic and social adjustments indicates a pre-existing personality disturbance. The chronicity of the pain and its refractiveness to heroic therapy leads the author to conclude that it is psychologically maintained. This is further confumed by the response to psychiatric therapy. Analysis of the underlying dynamics re-eals hostility and dependency to be important factors. The opinion is expressed that the postoperative phenomena of an acutely painful phantom with attendant behavior disturbance constitutes a psychiatric energency.

This small volume should prove valuable to both surgeon and psychiatrist it indicates the need of a combined therapeutic approach on the part of both in the management of the painful phantom

-JOHN J KALANAGH M ; USAF (NC)

A DYNAMIC PSYCHOPATHOLOGY OF CHILDHOOD by La tt B nd
M A M D 275 pag Il rat d Ch l C Th ma P bli h
Spr gf 1d Ill 1954 P \$7 50

This volume the third in the Bellevie Studies of Child Psychiatry in no way provides the broad foundation for understanding the various problems of emotional development in childhood th it is title seems to promise. In a natrower's nise however it does delive into various areas of psychopathological responses by presenting a wealth of it cinating clinic I material. Most of this has appeared earlier but its current presentation is deemed warranted because of follow up studies severally er. Later Although well aw r. of the difficult e. in olved obtaining follow up eatuant in of any sort. I wis disappointed in the generally cursory and inconclusive nature of most of these later studies.

The sections on hallucinatory experiences imaginative comp nions and internalization of fantasy objects are worth-while reading not only for the psychiatrist b t for anyone else who works with children and needs to underst nd them The positi e attitude taken tow if these experiences in considering them efforts on the part of the child to experience a satisfactory reality in the face of an obviously un satisfactory one is refreshing when so often any expression of fartisty life is looked upon as evidence of a pathologic process

The discussion of impulsions obsession and compulsions offermuch of value to the child psych trist and also contains many corrects especially useful to the military psych artist I found the sections treating of sexual expression of identification conflicts full of surprising and interesting case rater all but licking in construct engrepretation or practical applicability

An article of particular general interest at this time is one treating of the effect of comic books on the ideology of children Originally written in 1941 by the author and Dr Reginald Lourie and modified only slightly in its present printing, it takes the view that such publications offer children an opportunity to work our their relationships to the social group—a sort of spoon fed dream life—and that as such they have definite positive value. There is room for considerable controversy. For example, the article advises comic book artists to avoid depicting "actual mutilation or violence or death" as occurring in relationship to any character with which the child can identify himself or his parents or his cause. Nor should any such act be committed by such a character unless the situation can be morally justified (italics mine). Shades of the Inquisition and the Salem witch hunt!

The atticle on the personality of Lewis Carroll as derived from Alice's adventures and written by Paul Schilder in 1938 has no le gitimate place in this volume nor has the section on childrens reactions to war "which is labored artificial and (because it represents more nearly a reaction to a questionnaire concerning war than to war itself) of doubtful validity and value

The volumes of this series could be improved by severe editing to achieve better continuity less repetition and a more nearly uniform over all viewpoint On the whole however this book should be a "must on the reading list of any psychiatrist treating children or handling character disorders in adults —JAMES N SUSSEX Comb (MC) USN

NECK DISSECTIONS by James Barrett Brown M D and Frank McDowell
M D American Lecture Series Publication Number 207 A Monograph
in The Bannerstone Division of American Lectures in Surgery 163
pages illustrated Charles C Thomas Publisher Springfield Ill
1954 Price \$750

The subject of definitive therapy of cancer of the head and neck is an extremely broad one to be so adequately covered in a small text The authors describe the method of a complete examination of the head and neck of a patient presenting himself with a carcinoma Step by step the reader is led through the examination of the cancer and at the same time an examination of associated parts including vessels and lymph system near and distant to the original site Even in this day of a cancer conscious" lay public this latter portion of the ex amination is too frequently neglected by physicians to whom patients first present themselves. After the primary site is located the reader is then led through the indications for and limitations of neck dis section Once the decision is made to resort to surgery there is a con cise excellently presented description of the preoperative measures the technic of unilateral dissection unilateral plus supraomohyoid dissection of the opposite side and bilateral upper dissection ac companied by excellent illustrations in color This section is followed by a description of the postoperative care and the results to be ex

pected Of special note is the section on neck dissection and law resection with an illustrated description of implants and grafts to preserve oral physiology

This book is of special interest to general surgeons plastic sur geons oral surgeons dentists and otolaryngologists because it out lines the only definitive therapeutic course to be followed if cancer is to be cured In advocating dispensing with the term prophylactic neck dissection the authors he taken an extremely desirable step because in over 30 percent of patients without palpable lymph nodes small metastases were present histopathologically thereby making the procedure a necessary one

The authors dwell on the elimination of the necessity of tracheoromy in surgical procedures of the mouth jaw and neck This policy may cause the vounger less experienced surgeon to postpone this proredure until the very last thus ecessitating an energency tracheotomy instead of permitting an orderly planned procedure which the patient would be in better physical condition to withst nd Tracheotomy a simple procedure and in most in tances should be performed pro phyl cucally

The bibliography is complete and more than adequate to make any oncologist and surgeon thoroughly conver ant in the field of cancer This is an excellent to t becau e of the straightforward teaching manner in which it is presented lea ing no doubt in the mind of the reader s to the course f therapy to follow to decrease the mortality rates in cancer of the head and n ck

-FRANK A PERRI LE COL USAF (MC)

MFDICAL USES OF CORTISONE drd by F 534 pag II tra d Th Blk t C I P \$750

This excellent book is a summation and appraisal of the experiences observat ons and study s of 29 outstanding specialists regarding the physiology pharmacology and clinical effects of cortisone hydrocortisone and corticotropin both systemic and topical during the five years the e substances have been available. Their employment in all the p cialties is well covered and the editor deserves much credit for conden ing int one small volume the current concepts of these authorities They are both factual and practical

The fundamental th me of the book is that while these products cure no dise they afford gratifying relief It is agreed that there is a valuable place in therapeutics for drugs such as these in comb t ing those dise ses which do not take life but just ruin it Compli cations side effects and contraindications are well delineated and the displaceme t of cortiso e by hydrocortisone is foreshadowed Some of the author ha e added the reports of others to the r own va t ex

perience The bibliographies of a number of chapters contain 500 refer

The chapters on physiology, pharmacology collagen diseases asthma dermatology and ophthalmology are particularly good. The chapter on rheumatoid arthritis is disappointing because of the meager review of rheumatoid spondylitis and the illustrations of dosage schemes (figs. 22. 23. and 24) which are simplified to absurding the authors however place emphasis on tailoring therapy to the individual and remind the reader that although the steroids and corticotropin may cause side effects the diseases they alleviate are often disabling.

This book will prove a most valuable reference and guide to all who prescribe cortisone hydrocortisone and corticotropin

—JULIAN LOVE Capt (NC) USN

DEPRESSION edited by Paul H Hoch M D and Joseph Zub n, Ph D 277 pages Grune & Stratton Inc New York N 1 1954 Price \$5 50

This work comprises the proceedings of the forty second annual meeting of the American Psychopathological Association in New York City in June 1952. The symposium on depression is presented as a series of separate papers representing many different approaches and disciplines for its study. The 20 contributors and six discussants are well known in the field and they cover a broad approach to the study of depression.

The reader may not find much that is new to him. The workers in each field have reviewed the progress or in some cases lack of it and presented theories for future investigation. The coverage is broad but as is stated some fields are not included because no new work is in progress or because suitable contributions were not available for the symposium. The symposium indicates that the causes of depression have not been discovered. There has been considerable progress however in understanding the dynamics of depression. Diverse approaches have revealed significant relationships among the many disciplines that will eventually lead to a knowledge of the obviously multidetermined causes.

Psychiatrists and interested workers in allied fields will find this book a helpful review of the various studies of the problem of depres sion. The scient st who may have become isolated in his own approach to the problem is given an opportunity to see what his colleagues are doing. The bibliographies are extensive and candidates for the American Board Examination in Psychiatry will find them helpful in their review. The appendix includes a list of officers and members of the American Psychopathological Association.

-ROBERT L. WILLIAMS NAI USAF (MC)

THE YEAR BOOK OF PATHOLOGY AND CLINICAL PATHOLOGY drd by Will m B W tman, M D 485 page ill ttd Th Y r B k P b-1 h I c Ch c g Ill 1954 P \$6

The presentation of material in this Year Book follows the same format as the 1952 edition however this edition is about one fifth larger in size

The extracts are selections from 1953 publications covering all fields of p thology and clinical pathology. The editors have succeeded extremely well in selecting out of the large field of publications only those articles of general interest to the pathologist Numerous photo graphs and charts are included

The book is highly recommended. It should be of value to all pathol ogists

-RISSELL II WALKER C pt (MC) USV

THE DOCTOR WRITES A A thol gy f th U ual Curr t Med I L terature dated by S. O. Waf M. D. F. A. C. P. 175 p. gc. Gru & Str tron I c. N. W. Y. N. Y. 1954 Prc. \$3.75

Few physicians other than professional editors had the time and good fortune to read all of the 17 articles reprinted in this small a thology when they first preased in medical journals during 1953 Only one editor had the enterprise to put between covers these un usual articles from the current literature so that they could be enloved by those who missed them earlier

Each piece deviates in its own direction from ordinary scientific ten its. One author presents a remarkable amount of medical lore culled from the Bible. Another dispels the much that many great physicians now dead possessed superior clinical acumen over today s practitioners From one of A Conan Doyle's teachers in medical school Dr Joseph Bell the reader learns something about Sherlock Holmes powers of deduction as a dermatologist Others include the strange story of Dr Albert Abrams the second American to write a book on the heart (1900) who became a colossal guick the bitter controversy that followed Roentgen's famous discovery a sensible plea t reduce multiple authorship of scientific articles and a few tricks of showmanship in medical teaching. The best in my opinion is An Unusual Obstetrical Case History Derived from the Pen of W Shakespeare Here the humor is high and unusual is the under statement of the year

This is the kind of a book which bears occasional rereading because it does not age. It reveals unsuspected literary skill among physician who have strayed off the beaten o th for their themes Best of all it is interesting-in a day when so much that it written is not Dr Waife now a member of the staff of this Journal has produced a book that will be enjoyed by ev ryone who reads for pleasure

-ROBERT I BENFORD Gol USAF (MC)

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 edition, 1,276 pages illustrated, Appleton-Century-Crofts Inc. New
 York, Y. 1954. Price \$13.50
 - THE STUDY OF THE BRAD. A Companion Text to the Stereoscopic Atlas of Neuroanatomy by Hyman S Rubinste n, M D Ph D D A B P N F A P A Attending Physician in Neurology and Psychistry United States Army Hospital Aberdeen Proving Ground Associate Physician (Neurology and Psychistry) Simi Hospital Formerly Director Alfred Ulliman Laboratory for Neuropsychiatric Research and Head of the Division of Neurology and Psychistry Department of Medicine Sinas Hospital Baltimore Md Foreword by Carl L. Davis M D Professor Emeritus of Anatomy School of Medicine University of Maryland Baltimore Md 209 pages illustrated Grupe & Stratton Inc. New York N Y 1933 Price \$9 50
 - LIVER INJURY Transactions of the Twelfth Conference September 21 22 and 23 1953 Princeton N J edited by F W Holfbauer M D Associate Professor Department of Medicine University of Minnesora Hospitals Minneapolts Minn. 231 pages illustrated Sponsored by the Josiah Macy Jr. Foundation New York N Y Printed in the United States of America by Corlies Macy & Co Inc New York N Y 1954 Price \$4.25
 - MYOCARDIAL INFARCTION Its Clinical Manifestations and Treatment with Anticoagulants A Study of 1 031 Case by Irving S Wr ght M D Charles D Marple M D Do othy Fahs Beck, Ph D This is a report of the Comm tree on Anticoagulants created by The American Heart Association and reflect that Committee s Indiangs in the matt'r under Study 656 pages Illustrated Published for The American Heart Association by Grune & Stratton Inc. New York N Y 1954 Price 38 50
 - RELIGION AND SOCIETY by Elizabeth K. Nottingham, Queens College Doubleday Short Studie in Sociology SSS 5 Consulting Editor Cha les H Page Professor of Sociology Smith College 84 pages Doubleday & Co Inc. Garden City N Y 1954 Price \$19.95

- THE STATUS OF MULTIPLE SCLEROSIS A 10 f Th N w Y kA demy f See c s Volum 58 Art 5 pg 541 720 July 28 1954 Edf R y Haldo V Confeece Chum P c B 1 y Org Ch trann d C ut Edd H ld R W erd 180 pag 11 t t d Th N w York A demy f Sc New York N Y 1954
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- THE THEMATIC APPERCEPTION TEST AND THE CHILDREN'S ALPER CEPTION TEST IN CLIVICAL USE by L p ld B ll k, M. D with the flowing Stritten Inc. N w York N Y 1954 P \$6.75
- MODERN OCCUPATIONAL MEDICINE ded by A. J. Fl. m. g. M. S. M. D. A. a. t. Med. cal. Dur. t. E. I. dulp. t. d. N. m. w. d. Comp. y. d. C. A. D. J. M. D. F. A. C. P. Sp. 1. A. t. a. M. dilb. D. E. I. dulp. t. d. N. m. w. d. Compay. A. c. t. ate. Edit. J. A. Zapp. Ph. D. Dur. t. H. skl. L. borat. y. for To. J. ky. d. I. d. t. H. skl. E. I. d. P. t. d. N. m. w. d. Comp. y. 414. p. g. 44. Hustrat. ns. 2. col. 32 t. bl. L. & F. bi.ge. Ph. I. d. Iphus. P. 1954. P. \$105
- THE MICROPHYSICAL WORLD by W ll m W l n, Ph D (L p g) D S (L nd) F R S. F ll w f k g Coll g L d nd P of Em t f Phy th U rity f Lond n. 216 p ge ll w t d Phil oph 1 L brary 1 c N w Y k N Y 1954 P 375
- THE YEAR BOOK OF PEDIATRICS (1954 1955 Y B k Se) did by Syd y S G ll M D A trP f or f P diatr II ward Med 15 h 1 Se Phy is Child M d 1 Cet B t M P duar into m Ch f B h 1 mel II p tal B t M I A Abi M D Ed Emet 4 31 p g II trid Th Y r B k P bl h Inc Ch go III 1954 P \$6.
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- INTRODUCTION TO SURGERY by 1 g A I d F I M D Ins I Surgery Cell to I P by c ad Surg Col mb U V A ad g Surg I P they c T P by 1 P 1 I C I Surgery Cell m I P they to D A M P I P 1 C I Surgery Cell m I P by c d S ge as Col mb at C I Surgery Cell m I P by C d S ge as Col mb at C I Surgery Cell m I Surgery D by the H I P t I N W Y A 3d d 233 p ge O ford U t ty P N W Y k N Y 1954 I S 4
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 1954 P 36.

- THE DEVELOPMENT OF MODERN SOCIOLOGY Its Nature and Growth in the United States by Roscoe C. Hinkle Ir and Gisela I Hinkle University of Rochester Doubleday Short Studies in Sociology SSS 6. Consulting Editor Charles H Page Professor of Sociology Smith College 75 pages Doubleday & Co Inc Garden City N 1 1954 Price \$0.95
- THE COLON ITS NORMAL AND ABNORMAL PHYSIOLOGY AND THERA PEUTICS Annals of The NewYork Academy of Sciences Volume 58 Att 4 pages 293 540 July 15 1954 Editor Roy Waldo Viner Organizing Chairman M. L. Tainter Conference Chairman Thomas P. Almy Consulting Editor W. L. Tainter 747 pages illustrated The New York Academy of Sciences New York N. Y. 1954 Price \$4.50
- MEREDITH'S HYGIENE A Textbook for College Students on Physical Mental and Social Health from Personal and Public Aspects by A thur P Davis B S Ed M Dr P H Professor of Physical Education The Pennsylvania State University and Warren H Southworth B S M A Dr P H Professor of Health Education The University of Visconsin 5th edition, 906 pages illustrated The Blakiston Color New York N Y 1954 Price \$6
 - THE YEAR BOOM OF MEDICINE (1954 1955 Year Book Series) edited by Paul B, Beeson, M D Cal Muschenbern, M D William B. Castle M D T nsley R Harrison M D Franz J Ingellinger M D and Phil p K, Bondy M D 711 pages illustrated. The Year Book Publishers Inc Chucago III 1954 Price 56.
 - UNIVERSITY EDUCATION FOR ADMINISTRATION IN HOSPITALS A Study Inaugurated by the Association of University Programs in Hospital Administration A Report of the Commission on University Education in Hospital Administration 1954—199 pages Published by American Council on Education Washington D C. 1954—Price \$3
 - BIOCHEMICAL DETERMINANTS OF MICPOBIAL DISEASES by Rene J Dubos The Rockefeller Institute for Medical Research. 152 pages Harvard University Press Cambridge Mass 1954 Price \$3 50
 - PSYCHOLOGY IN NURSING PRACTICE 2d edition. Leste D Coi Ph D
 Associate Professor of Education Brooklyn College Alce Cou Ph
 D Assistant Professor of Education Brooklyn College Chales E.
 Skinne Ph D Professor of Education New York University 435
 pages illustrated The Macmillan Co New York N 1 1954
 - BABIES ARE HUMAN BEINGS An interpretation of Growth by C. Ande son Ald ich M. D. Late Professor of Pediatrics Mayo Foundation Grad unte School University of Minnesota and Mary V. Aldrich. 2d edition 122 pages illustrated. The Macmillan Co. New York N. Y. 1954 Price \$2.95
 - SMONING AND CANCER A Doctors Report by Alton Ochsner M D President American College of Surgeons 1951 1952 President American Cancer Society 1949-1950 President, American Association for Thoractic Surgery 1947 1948 86 pages illustrated Julian Messner Inc. New York N Y 1954 Price \$2
 - THEORY AND PRACTICE OF CROWN AND BRIDGE PROSTHESIS by Stanley D Tylman D D S. M S. F. A. C. D Professor of Prosthetics. Head of the Department of Fixed Partual Dentures University of Illinois College of Dentistry Chicago Ill 1017 pages with 1364 text illustrations and 9 color plates. The C. V Mosby, Co. St. Louis. Mo. 1954. Price \$16.

- FIXED PARTIAL PROSTHESIS by j ph E Ew g D D S F A C D
 Prof so f Crown and B dge Prot h s Templ U v ry S h i
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- SURGICAL TREATMENT OF CANCER OF THE CERVIX edged by Jo V
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- SURGICAL TECHNIGRAMS by F M AI Aki M D A at Att ndi gS r geon K g Co aty H p t l 341 pg s ll tr t d M Graw H ll Bo k C I N w Y k N Y 1954 Pr \$12.
- DEVELOPMENTAL ANATOMY A T stbook ad L borat ry N 1 of Embry 1 gy by Le le Bm d A ey Ph D S D LL D Robe L gh In R P f s f A atomy N thw ten U r ty 6th edt n. 680 p ge 630 ill str ti ns me i ol W B Ss d r Co Ph l d lphia P 1954
- A HISTORY OF MEDICINE 1 Tw V 1 mes by R lpb H M , M D F of M d n ad of th H ry f Med coe Th U ty f K Th Schol f M d coe Ka s CY K V lum O p g s 1 t 564 V lum Two page 565 t 155 ill at d Charl s CTh mas P blisber Springf ld III 1934 P 51450 c.
- THE BANE OF DRUG ADDICTION by On R Y I M D Filw f Th
 Am In Pyh tric As o F m ly Nur pyh tr t V trs Adm trat 155 pag The Mamil Co NwYk N Y
 1954 Pn 14
- HUGH ROY CULLEN A Stry f Am can Opp nity by Ed k Ima d
 The Wight ill trat d by N k Egg b // 376 pg P t eH II I c N w Y k N Y 1954 P1 \$4
- DISEASES OF THE SKIN F P ett e d Stud t by 6 rge Clat
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- ESSENTIALS OF PEDIATRICS by Phip C. J. s A B M. D. L. te Pofss f Pd t t St U sty f I w I w Cty F H w II
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- PSYCHOANALYTIC INTERPRETATION IN RORSCHACH TESTING The pd Appl un by Roy S haf Ph D Ch f Cl c l P y h logir t D p tem t f Psy h atry Y l Just ty S h l l M d 1 A46 pag Gra & Stratt I New Y tk N Y 1954 P 4875
- pag Gru & Stratt I New Yrk N Y 1954 P \$8.75

 THE ANATOMY OF THE BRONCHIAL TREE W th Spe I R fr c to
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 the Syr C Bock, M S (L d) F R C S
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 th B ompton Ho ptal 2d duo 243 pag II strad Oxf d
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- SEROLOGICAL APPROACHES TO STUDIES OF PROTEIN STRUCTURE AND METABOLISM edited by William H Cole contributors Alan A Boyden Melvin Cohn David Gitlin, Felix Haurowitz Michael Heidelberger and J Munoz Rutgers University Bureau of Biological Research The Annual Conferences on Protein Metabolism 97 pages illustrated Rutgers University Press New Brunswick N J 1954 Price \$2
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Monthly Message

Nowadays neither the Command in the Armed Forces nor even the physician in civil life gives heed to the serious problems of infection and epidemics which only a comparatively few years ago were the nightmares of their commands. At the dawn of the century for example mortality from typhoid fever varied between 10 and 30 percent which persisted until the advent of typhoid inoculation just prior to World War I Fven for those who recovered the morbidity and resulting loss of manpower were fantastic.

Scarlet fever The hospital mortality was 5 to 10 percent in mild epidemics and 20 to 30 percent in severe epidemics

Measles In large cities this tanked third in the mortality of the eruptive fevers due chiefly to its pulmon ry complications.

Who oping cough "Taken with its complications whooping cough must be regarded as a very fatal infection (Osler's Principles and Practices of Medici e 2d edition 1895). It was regarded as third among fatal diseases in children in England.

D phtheria The mortality was 30 to 50 percent

Erys pelas A mortality of 4 to 7 percent

Cholera. A mortality of 30 to 80 percent varying with epidemics

Tetanus The mortality was 80 percent following trauma

Tube culos s In 1900 the death rate was 183 9 per 100 thousand as against 12 2 per 100 thousand in 1953.

Pn monta During my medical school days this disease carried a nortiality of 20 to 30 percent about 65 percent in the aged Now the mertality is low and the disease itself far less common. The influenza epidemic of 1918 needs no comment with its widespread morbidity and heavy mortality.

Diabetes has been largely conquered through the use of insulin

Pem cious an ma is now well controlled by the use of

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The "floating hospitals" that were so common in my own medi cal school days in an attempt to control the infectious diarrhea of infants in the summer are now things of the past, and so also is the fatal diarrhea of infants that was so prevalent each summer

All of this has occurred within my own lifetime and much of it since World War I It could all happen again with any let down in our measures of prevention both in sanitary engineering and in medicine and I would bid all of you, lay and professional alike. consider the need of continued constant vigilance

> FrankBBerry FRANK B BERRY M'D Assistant Secretary of Defense (Health and Medical)

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Foreword

FRANK B BERRY M D
A t 1 S cretary of D | (H lib a d M d al).

MAJOR GENERAL GEORGE E ARMSTRONG
Sung G er i U i d S i . Army

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United States Armed Forces Medical Journal

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March 1955

Number 3

INTRA ARTERIAL vs RAPID INTRAVENOUS BLOOD TRANSFUSIONS

Experiences in a Forward Surgical Hospital in Korea

CURTIS P ARTZ Lieutenant Colonel MC USA
YOSHIO SAKO Capta n, MC USA
ALVIN W BRONWELL Capta n, MC USA

ARLY in the korean conflict, intra arterial blood trans fusion was used in the resuscitation of hundreds of men critically injured in battle. The resulting impressions of the many surgeons in the theater varied so widely that, after an extensive clinical experience, we initiated a clinical evaluation of transfusion by the intra arterial route in an attempt to outline the possible indications for the procedure. During the early phase of the study, every patient with severe oligemic shock received an intra arterial transfusion. Blood was usually transfused into the femoral artery through a 15- or 17 gage needle. The femoral artery was surgically isolated and the surgeon held the needle in the artery during the administration of the blood. A Rochester plastic needle was used in two patients after cutting down on the femoral artery and in one patient blood was given directly into the aorta through a 17 gage needle during a laparotomy.

The technic of surgically isolating the femoral artery and holding the needle in place during the rapid infusion of blood was feasible. Minimal amounts of blood were given simultaneously by intravenous infusion. The maximum amount of blood normally given intra arterially was 3,000 cc though in one patient who received 4 500 cc, intra arterial transfusion was discontinued as soon as the pritient's systolic blood pressure reached 100, and further replacement therapy was given intravenously. No complications occurred from this therapy. When the needle was removed from the artery, any bleeding was readily controlled with a small piece of gelfoam and gentle pressure. The large

From Surg cal R e ch Te m Arm) W d cal S r ce Graduat School Wa hagr n D C. Col Artz: n w ss gn d to Brook Army M d cal C ater Fort Sam Houst T x

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gage needle because of its larger lumen was preferable to the Rochester plastic needle Unless the surgeon steadied the needle during the pressure transfusion it would impinge on the wall of the artery and a free flow of blood would be impeded

RESULTS

After seven patients in severe oligemic shock had been re suscitated by intravenous blood transfusion through multiple veins the data were assembled Six patients had received intra arterial transfusions and seven had received rapid intravenous transfusions In the clinical evaluation of the patients ir the two grouns the degree of shock was comparable Four patients two groups the degree of snock was computative Four patients in the former group and only one in the latter group were admitted with an unobtainable blood pressure. The degree of injury and amount of hemorrhage however was greater in those receiving blood intravenously and the amount of blood required for resus citation was slightly higher. The data on these patients are sum marized in tables 1 and 2

There was no appreciable difference in the rate at which blood was given to patients via artery it was 88 cc per minute and via vein 70 cc per minute No attempt was made to achieve an absolute maximum rate of infusion by either method. These data represented the actual accomplishments of blood replacement at one forward surgical hospital in a small comparable series of patients in deep oligemic shock. In one moribund patient not included in this series a definite attempt was made to determine how rapidly blood could be infused by the intravenous route In 30 minutes 5 500 cc of blood were injected into two veins through 15 gage needles 3 500 cc of the blood were pumped into one voin in 21 minutes. This demonstrated that blood can be given very rapidly by the intravenous route

After the controlled use of intra arterial transfusion in six patients it was our belief that the patients did not show any appreciably improved response as compared with patients who received blood at a comparable rate through multiple intravenous routes

DISCUSSION

Proponents of the belief that intra arterial transfusion is su perior to intravenous transfusion in the treatment of hemorrhagic shock have cited the following reasons to account for its supposed superiority (1) blood given intra arterially increases the coronary and cerebral arterial flow (2) direct infusion into the arterial tree causes an instantaneous rise due to the simple hy drostatic effect, (3) blood given intravenously would tend to pool whereas intra arterial blood readily mixes and (4) blood

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TABLE 1 Pattents receiving intra arterial blood transfusions

	The same and the same of the s					**************************************
Patient	Wound	Blood pressure on admission	Time in minutes	Amount of blood (cc)	Rate per minute (cc)	Results
-	Nultiple of body sucking of chest traumatic amputation of right hand	0/0	45	000 €	7.0	Recovered
7	Traumatic amputation of left leg penetration of right thigh abdomen and hand fracture of clavicle		09	4 500	٤,	Recovered
m	Traumatte amputation of right leg fracture of radius and humerus perforation of chest	0/0	35	3 000	98	Died on operating table
*	Penetration of chest and abdomen perforation of right arm	0/0	30	1 200	20	Recovered
~	Perforation of inferior vena cava Incertion of left kidney perfora tion of duodenum	120/80	10	1 500	150	Died 3 1/2 hours follow ing operation
9	Penetration of abdomen and sig mold colon Inceration of super ficial femoral artery penetration of right leg	0/0	30	3 000 (and 1 500 cc dextran)	00	Recovered
	Average rate				88	

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can be administered more rapidly by the intra arterial route. These four reasons are given as prime factors in the superiority of intra arterial transfusion over intravenous infusion. At the time most of these statements were made, there was no experimental or clinical evidence to support their contentions.

Pecently a number of well-designed experiments were carried out in an attempt to evaluate the role of some of the above mentioned factors hohistaedt and Page, and Case and associates, studied the effects on coronary flow and arterial pressure following intra arterial and intravenous infusion of equal magnitude in dogs in oligomic shock for varying periods of time. They were able to show in repeated experiments that coronary flow and arterial pressures responded just as rapidly and to the same extent with either intravenous or intra arterial blood transfusions. In addition, the right and left auricular and pilmonary artery pressures were measured and found to be the same during both types of transfusion. Their conclusion was that their data did not constitute a contraindication to intra arterial blood transfusion but that there was no convincing evidence that it was superior to intravenous blood transfusion.

Patients in shock may not have a discernible vein suitable for Living infusions, but if by surgical means the same search 19 made to locate a vein as an artery, it could be found Moreover, when necessary, the femoral vein is always available for can nulation. The statement that blood can be administered more rapidly by the intra arterial than by the intravenous route is not true Case and associates in summarizing their findings stated that the rate of administration is a function of the pressure in the bottle, pressure in the vessel, resistance to the flow of blood in the needle and tubing, and the viscosity of blood. Under these circumstances, blood can be administered more rapidly through the intravenous route. Another statement frequently made is that blood administered by the intravenous route will produce cardiac failure There is evidence to show that this is so only after the blood pressure has returned to normal or when there is an under lying cardiac disease. The contention that direct infusion into the artery at rates as currently practiced will cause a rise in pressure due to hydrostatic effect has not been substantiated Valones and co-vorkers' gave rapid infusions of blood, both intra senously and intra atternally, and measured cardiac output by the blue-dye injection method. They also measured mean atternal pressure on a series of normal dogs and on dogs in shock due to herorrhage they were unable to demonstrate any difference in the rise in arterial pressure by transfusion through either route Case and associates cited other experimental work along the same line of investigation indicating that an animal in oli

gemic shock did not respond more favorably to intra arterial blood transfusion than to intravenous blood transfusion. The volumes of blood concerned when transposed from the rate of a dog to that of a man were in the realm of 445 cc per minute this rate is much higher than the rates given in a clinical operation

Richards and Hansen also studied the comparative action of intra arterial and intravenous transfusion in the treatment of oli gemic shock They found no demonstrable advantage of intra arterial over intravenous transfusion when equal infusion rates were used They stated that rapid intravenous transfusion was well tolerated particularly when vessels were in a collapsed state due to hemorrhage They concluded that this was logical because the blood flow to and from the heart per minute is many times the volume of blood which can be forced into the circulation by any type of pressure of transfusion in a similar length of time Prior to their experimental work statements regarding the ad vantages of intra arterial transfusion over the intravenous route were made without being substantiated by clinical or laboratory experiments

A situation in which intra arterial transfusion may be indicated is in the resuscitation of a patient whose heart is in asystole because once the output of blood from the left ventricle has ceased there is no other way for the blood to get into the ar terial tree Another situation would be the sudden need for mas terrai tree Another situation would be the sudden need for mass sive transfusion during an operation for mitral stenosis to get blood into the arterial tree Except for these two unusual cir cumstances, most of us believe that there are certain disadvan tages associated with the process of intra arterial transfusion Cases have been reported of arterial insufficiency necessitating amputation of an extremity tissue necrosis arterial spasm caused by arterial cannulation and in some instances a delay in getting the blood infused because of additional time required to begin the intra arterial transfusion A major criticism by most investigators on the work of those who present the advantages of intra arterial transfusion over intravenous transfusion is that their clinical as well as experimental investigations have not dealt with comparable rates of infusion of blood 1-4 In some in stances conclusions were based on patients in whom four times as much blood was given by the intra arterial route as was given to others by the intravenous route

Because the impressions gained from patients in whom blood was given primarily by the intra arterial route coincided clinically with the above experimental data intra arterial transfusions were discontinued in favor of rapid intravenous infusion of blood through multiple large gage needles or intravenous cannulas

CONCLUSIONS

No definite conclusions can be drawn from this very limited experience Our impressions were that blood given by the intra arterial route was of no more value in the resuscitation of na tients in deep oligemic shock than was blood administered by the intravenous route, if it was given at the same rate In one forward surgical hospital, it was observed that blood replacement in a small series of similarly severely wounded patients was accomplished as rapidly by multiple intravenous routes as it was by the intra arterial route

SUMMARY

The clinical evaluation of intra arterial blood transfusions h administered to six patients who were wounded in combat was I compared to the results obtained by rapid intravenous trans fusions given to seven men who also were combat casualties The average rate of blood given intra arterially was 88 cc per minute, and intravenously, 70 cc per minute These were actual rates at which blood was given and not the maximum rate; no: sible There was no discernible difference in the rate of response between the patients who received blood intra arterially and intravenously

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A NEW LABEL FOR AN OLD ACQUAINTANCE

The official journal of The Association of Military Surgeons of the United States known since 1901 as The Wilitary Surgeon on 1 January 1955 became Military Medicine This new tile no e accura ely identifies the na me of the publication whereas its previou name often resul ed in the miscorception that he arricles were limited to the field of surgery Volumes of the morally incress will be continued in se quence the January 1955 issue being number I of volume 116

COMPARISON OF HUMAN AND SHEEP BLOOD AGAR IN DETECTING STREPTOCOCCUS

Observations in Acute Tonsillitis and Pharyngitis

WILLIAM F NUESSLE C pt n, USAF (MC)

DONALD E WRIGHT S dL t na t USAF (MSC)

PAUL R JONES Staff S g t USAF

IN A STUDY of the causative organisms of tonsillitis and pharyngitis in patients admitted to this hospital obser vations were first made on and data collected from 135 men admitted with these conditions in the three month period from September through November 1953

In general the hospitalized patients displayed exudate marked fever or toxicity Bacterial cultures were performed on admission by streaking a pharyngeal swab over human blood agar plates

These plates were prepared by using donor blood which had reached the expiration date usually three to four weeks Fifte n cubic centimeters of blood containing 0.035 gram of dextrose 0.031 gram of sodium citrate and 0.011 gram of citric acid as anticoagulant were added to 250 cc of media consisting of 2.5 grams of bacto tryptose 0.75 gram of bacto beef extract 1.25 grams of sodium chlor de 4.25 g ams of bacto-agar and distilled water

Streptococcus viridans or Streptococcus pyogenes was usually obtained. The following is the frequency of occurrence of each organism. Str. pyogenes 51. Str. viridans. 40. Str. pyogenes and Str. viridans. 26. Diplococcus pneumoniae. 9. nonhemolytic streptococci. 5 and titerococcus pyogenes. 4.

Str pyogenes was found in a total of 77 instances. There was little difference in those showing various bacteria in regard to fever exudate glandular enlargement, or duration of illness.

It was then suggested that sheep blood be substituted for human blood in preparation of plates Sheep blood plates were accordingly prepared similarly to the human plates except that the blood was fresh and 135 cultures were obtained from con secutive adult male patients admitted with acute tonsillities and pharyngitis in an 11 week period beginning in February 1954

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Str pyogenes was obtained in every instance. This organism predominated in all but 13 cultures when only scattered colonies were found It was at times associated with Str. windows and in six instances with # puogenes

To determine the difference between human and sheep blood agar plates in detecting Str pyogenes throat swabs from each of 20 patients were streaked on both types of redium Only 10 of the 20 human blood plates showed Str pyogenes but the sheep blood plates revealed it in every instance. In each of the two series, the colonies were limited or scattered in three instances In the 10 remaining human plates Str viridans predominated in nine and D pneumoniae in one

Throat cultures on sheep blood agar were then obtained in 14 unselected personnel from the hospital kitchen Str pyogenes was found on 13 plates. It was the predominant organism in five None of these five persons admitted respiratory symptoms, though three of the eight others with streptococci did

CLINICAL CONSIDERATIONS

Clinical comparison of the 135 subjects tested on human blood agar (group 1) and those on sheep blood agar (group 2) revealed no essential difference The age distribution, presence of exu date, degree and duration of fever, total and differential white blood cell count, presence of tonsillar hypertrophy or cervical node enlargement, and duration of hospitalization were very similar in both groups. This suggests that clinically, at any rate, there was no significant difference in the infection present in the two groups, which makes the bacteriologic findings (on the two types of blood agar) more pertinent

Antibiotic therapy usually consisted of 360 mg (600,000 units) of penicillin procaine daily Another antibiotic was used when matients were allergic to penicillin or then penicillin had been unsuccessful as outpatient therapy During hospitalization, it was believed necessary to change from penicillin to another antihiotic in eight patients from group 1 and in 13 from group 2 Penicillin sensitivity was the reason for change in three cases from each group In the other 15 who had more than one antibiotic. response to penicillin was considered satisfaction

Varked gastrointestinal symptoms, including nausea, vomiting, and diarrhea were present in 15 of the total of 270 patients Bronchitis and sinusitis were common Herpes simpley was pres ent in 16 of the 135 patients in group 2

The average stav in the hospital was four days. Twenty nine patients were hospitalized 10 days or more Twenty four of these had a complicating disease

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DISCUSSION

Str pyogenes was found in a larger number of patients on streaked sheep blood agar plates than on human blood Sheep blood is recommended by some³—in culturing streptococci Fel ler and others and Feller and Stevens found sheep blood agar a reliable means of detecting group A streptococci

There is some question whether the patients reported had true streptococcus disease Leukocytosis exudation and rising anti strentolysin titers are considered reliable indexes of strentococcus infection Routine antistreptolysin titers were not per formed in the reported patients Initial high titers have been re ported in most instances of streptococcus infection in an endemic area About five percent of the people of a community harbor group A streptococci however, such carriers of streptococci usually show only a small number of organisms on culture. The same authors found that true streptococcus infection with antibody response in convalescence frequently produced a predomi nant growth of Str pyogenes on throat culture It is likely that in ondemic areas a large proportion of apparently healthy persons harbor streptococci A recent report indicated that 90 percent of 53 patients with streptoccus infection harbored the organism three months after the illness Studies here indicate that 13 of 14 men (93 percent) working in the hospital kitchen showed Str pyogenes on throat culture

It is possible that some of the difference in hemolysis on huran and sheep blood represents a human error. Recent workers have emphasized that classification of hemolyte streptococci from surface colonies was an arbitrary decision between the alpha prime and beta varieties. A more reasonable explanation for the apparent deficiency in hemolysis on human blood agar is the presence of an inhibiting factor in the blood. Antistreptolysin could be such a factor. Our human blood was obtained from donors who lived in this apparently endemic streptococcus area. Antistreptolysin. O titers were performed on four patients from the surgical service whose history revealed no recont infection. Titers were 100 125 and (in two) 250 Todd units. Values of 250 units have been considered significant. When antistreptolysin titers were performed on four patients with recent pharyn gitis, two were 168 and 250 and two were greater than 333 units. It is likely that many persons have high titers of antistreptolysin here such as was reported at another endemic area.

SUMMARY AND CONCLUSIONS

Cultures from 135 hospitalized military men with acute tonsil litis and pharyngitis were streaked on human blood agar Str

pyogenes was found in 77 cultures. One hundred thirty five subsequent patients with sore throats had cultures performed on sheep blood agar Str pyogenes the predominant organism in 122 was found in every instance The clinical findings in the two groups were essentially the same In 20 patients from the second group, cultures were made on both human and sheep blood Str puocenes was present on 10 of the human blood agar plates, and on all 20 of the sheep blood plates

It is suggested that there may be a factor in human blood which inhibits growth and hemolysis of Str pyogenes This theoretical ly, could be antistreptolysin, which is apparently present in high titrations in the blood of persons from endemic streptococcus disease areas

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The editor who works over a poor manuscript can make it fairly presentable but it never hides the lack of mlent completely. It is like trying to hide a day's growth of beard with talcum powder. You cannot do it It may look all right at a distance but when you get up close the beard shows through

CLINICAL ASPECTS OF HYSTERIA

JACK C WESTMAN L t na t (jun g ad) (MC) USNR

YSTERIA is of interest to all physicians because it is a psychiatric syndrome touching each field of medicine in the older psychiatric literature hysteria was thought to be an illness occurring primarily in women but military experience has revealed that it is not uncommon in men Davis and Blick! for example, found that 18 percent of 1 218 psychoneu rotic servicemen presented symptoms of hysteria

When an organic cause cannot be found a complaint is often suspected of being of psychogenic origin and is sometimes erroneously believed to be due to hysteria Because physical complaints without structural basis are typically found in other psychiatric conditions further investigation is necessary in order to establish the diagnosis of hysteria Somatic symptoms are commonly associated with anxiety reactions depression and schizophrenia For example a headache for which no organic cause can be found may be a manifestation of an underlying schizophrenic process chest pain may be one facet of an anxiety state and in middle aged porsons a depression may present itself primarily through somatic complaints

In the modern psychiatric nomenclature the word hysteria has been supplanted by the term conversion reaction, or conversion hysteria Most psychiatrists now believe that the dissociative phenomena of amnesia fugue somnambulism and multiple personality previously considered forms of hysteria are qualitatively distinct from conversion hysteria

The conversion reaction includes somatic symptoms involving the voluntary neuromuscular and sensory perceptive systems. Partlysis the tremor and aphonia illustrate the former anes thesia, paresthesia pain deafness and visual defect are examples of the latter in essence the conversion symptom presents itself as an alteration in function of a part of the body innervated by the voluntary nervous system. Study of this syndrome has revealed a group of salient features which are typical of the reaction type.

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MANIFESTATIONS OF HISTERIA

The conversion symptom usually appears in a person with a predisposing personality pattern, commonly known as the "hysterical personality". The life history of the patient frequently reveals the following character traits emotional in stability, vivid fantasy life, morbid desire for sympathy, egocentricity, and suggestibility in other words, he appears to be generally "emotionally immature and superficial," although he may show excellence in intellectual spheres Proficiency in dra matics and a tendency toward exhibitionism are often encounter ed This type of person has been described as possessing strong dependency needs and as tending to lean on a stronger person, like a child on a parent

A second characteristic is that the symptom has a symbolic meaning for the patient Often it may be related to his previous experience with illness It may represent a past event in his life, symbolize a distasteful impulse, or be directly acquired from an illness of another person. This factor operates on an unconscious level obscure from the pritent's awreness.

Another important feature is that the symptom may be an elaboration of an already existing organic defect. This point emphasizes the need for an exhaustive physical examination as a necessary first step in establishing the diagnosis of conversion reaction.

The symptom does not comply with anatomic fact and is related to the patient's knowledge of medicine and anatomy. A person sophisticated in medical matters may present symptoms that are difficult to differentiate from organic disease. This is particularly true with patients who have had frequent physical examinations.

The patient is often relatively indifferent toward his symptom. This attitude has been characterized by Janet as "la belie in difference." It leads to the frequent finding that the patient is comparatively free from anxiety while he possesses the symptom, illustrating that the symptom literally "drains off" or encapsu lates his anxiety. A corollary to this observation lies in the fact that many patients become extremely anxious when their symptom is abruptly removed. Herein exists the danger in the premature alleviation of a conversion symptom.

The acute presenting symptom usually follows a stressful situation which may be elicited by inquiry into the circumstances currounding the onest of the illness. Often the patients are vague and appear to have a memory loss for these facts, however, per sistent history taking is fruitful in almost every case. It is clear

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that the symptom offers an escape from a painful anxiety producing circumstance

The last point is that a background of sexual inadequacy is a frequent finding and 10 often aynamically related to the origin of the conversion symptom Hippocrates was not far from the truth when he implicated a wandering uterus as a causative factor in illnesses that he termed hysterical In women a rejection of sexual function is frequently manifested as frigidity. In men a basically feminine orientation is often observed especially in the sense of rejection of an aggressive masculine role

The foregoing principles may be advantageously illustrated by the following case presentations

CASE REPORTS

Case 1 A 21 year-old marine was hospitalized because of paralysis and pain involving his left arm. His illness began six weeks prior to admission when he first noticed pain in his left upper arm under the metal buckle of his gun strap while on the rifle range during basic training. The discomfort extended to the medial aspect of his forearm and was characterized by several remissions and exacerbat one On returning from leave at his home one week prior to admission he woke in the morning with rotal paralysis of the left arm

Family history disclosed that the patient was the fourth of six siblings and that he relied heavily for advice and counsel on an older sister For six years his father had paralysis of his right leg of un known cause initially displaying symptoms similar to thos presented by the patient During the patient's leave his father suffered from a heart attack. His mother worked in order to support her family and invalid husband. She was the dominating figure in the home. A paternal uncle also had paralysis of a lower extremity and another uncle was a chronic invalid throughout most of his life Personal history revealed that the patient finished college at the age of 19 graduating with distinction Throughout his scholastic career he had furn shed some degree of financial support to his family while actively participating in extracurricular activities. At the age of five his left arm was injured in a washin, machine toller and thereafter he cons dered that extremity to be weaker than the right. He exhibited little interest in heterosocial activities

This patient is case illustrates the development of a conversion paralysis similar to his father's affliction elaborated from an underlying median neuropathy in an extremity which had been in jured during childhood. A previous history of academic excel lence was present. Emotional reliance on an older sister il lustrated his basic immaturity and dependency. In response to the stress of Marine Corps basic training and separation from home he reacted with functional incapacity consistent with his passive orientation. When his symptom was removed by suggestion, the patient began to have typical hyperventilation attacks and other manifestations of "free-floating" anxiety. His symptoms were ultimately alleviated when he was separated from military service.

Case 2 A 27 year old maval enlisted man was hospitalized be cause of paralysis of the left side of his body associated with dramatic complaints of "drawing" and pain of thee days diration. His symptoms developed following the eats of injury to him made by a fellow sear-in

Family history disclosed that the patient was the youngest of four children. He claimed to be the passive recipient of abuse and rejection by his siblings. He was closely attached to his mother who died one year previously following a cerebrovascular accident causing left bemiplegia. His father died from cirrbosis of the liver and chronic alcoholism. Throughout his life the patient leaned upon other persons helplessness characterizing his relationships with them. He was avid in religious affairs aspiring to be a minister or a radio actor. His psychosexual adjustment was inadequate and he had divorced and remarized his wife.

Here again a predisposing personality pattern of immaturity was elicited, and previous experience with a similar syndrome in his mother was present. A pattern of sexual inadequacy and a precipitating stressful situation were found in response to threats of injury to himself the patient reacted with fear of death from a stroke like that of his mother's, probably stemming from his lifelong feminine orientation which may have been a result of contacts with a weak alcoholic father and a domineer ing mother

DISCUSSION

Essential to the concept of hysteria is the fact that a conversion symptor provides an indirect but effective method of manipulating the patient's environment. Thus in women recurrent abdominal pain may conveniently excuse a wife from marital relations and furnish a means of expressing hostility toward her husband. Not infrequently posttraumatic disability remains refractory to treatment until compensation matters have been settled. In unpleasant military situations aphonia offers a means of escape to less threatening surroundings. The secondary gain inherent in the conversion symptom often appears to be more adequately described as primary gain, especially in military practice. however, study of most cases reveals that symptom production operates on an unconscious level. The symptom usual ly is only a manifestation of a more pervasive illness.

A thorough physical examination is a prerequisite to establishing the diagnosis of conversion reaction. Psychiatric study

should disclose the purpose and symbolic meaning of the symp tom in addition to the presence of hysterical personality traits The diagnosis cannot be made on the basis of either physical or psychiatric examination alone. Occasionally the true diagnosis is overlooked because of physical signs associated with the conversion symptom When present these signs are clearly secondary to loss of function Examples are disuse atrophy edema and alterations in skin temperature and color following conversion paralysis

Treatment of the conversion reaction is directed toward the underlying personality structure through intensive psychotherapy Removal of the presenting symptom by employing suggestion enhanced by any of a number of physical agents is usually a comparatively simple matter When used with suggestion, barbiturate narcosis hypnosis and carbon dioxide inhalations are of value The important point is that the patient should be allowed to part with his symptom gracefully

SUMMARY

A symptom without demonstrable or_anic basis may be a mani festation of several psychiatric illnesses. It represents a conversion reaction when it presents an alteration in function of part of the body innervated by the voluntary nervous system and when it serves an unconscious purpose for the patient Typical features of the conversion reaction are (1) predisposing hys terical personality (2) symbolic meaning of the symptom (3) possibility of the symptom being an elaboration of organic de fect (4) disparity between findings and anatomic fact (5) relative indifference of patient toward symptom (6) production of symp tom by stressful situation and (7) background of sexual inad

Treatment includes psychotherapy directed toward those under lying personality traits which lead to the production of symptoms The removal of the presenting symptom may be accomplished by suggestion enhanced by pharmacological agents or hypnosis

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RIP CORD FOR EMERGENCY RELEASE OF IMMOBILIZED MANDIBLE

LIMBLE A TRAEGER Lieutenant (DC) USA

IT IS generally agreed that when maxillofacial fractures are adequately treated during the first 24 hours after injury the results are notably better than those obtained after delayed treatment. In patients with facial fractures who require inter maxillary fixation immediate treatment is frequently delayed because of the danger of asphyxiation due to vomiting. This danger is particularly great in patients having a full complement of teeth, with the teeth fixed in occlusion it would be virtually impossible to expectorate vomities.

In military operations it is often necessary to transport patients for long distances "Air evacuation has been used efficiently in horea, and the air evacuation airplane will play an increasingly important role in military planning operations and successes "Unfortunately, airsickness is occasionally encountered during flight and is one of the most important problems in aviation medicine It is a constant threat and hazard to the patient with intermaxillary fixation

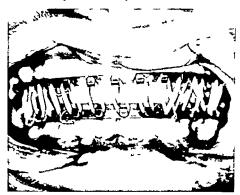
"Arsickness may be defined as a condition occurring prin cipally as a result of accelerations in aircraft flight which is marked by nausea, vomiting instinctive fear pallor sweating, vertigo, and prostration. It may require several hours for an attack to reach the vomiting stage but in some instances it has been observed that a case will progress from normal to violent nausea and vomiting within a few seconds." This condition is normally self limited but vomiting, could prove disastrous to the patient with intermaxillary fixation. The effectiveness of various drugs for the prophylaxis of motion sickness has been in vestigated, but the exact mechanism by which protection against motion sickness is achieved is not known, and no completely satisfactory drug is now available."

Should nausea occur during air evacuation, even the patient equipped with scissors or wire cutters would have considerable difficulty removing the fixation in order to open his mouth. The time required to remove intermaxillary fixation depends largely on the type used. When instruments are readily available, and under

ideal conditions trained personnel can remove an intermaxillary elastic or wire fixation in a few seconds During various stages of evacuation, however neither the desired instruments nor the personnel may be available Scissors or wire cutters even when given to the patient are frequently lost or misplaced

EVALUATION OF EXISTING METHODS

A preliminary study was done under ideal conditions to deter mine about how long it would take to remove a few common types of intermaxillary fixation. Four patients were selected and the



F gw I I termax llary la tics applied to mand bula and max llary arch bars.

time to remove their fixation was determined. A nurse with 17 years experience in nursing was asked to remove the fixation for a patient as quickly as possible so that he could open his mouth. The patient had intermaxillary elastics applied to man dibular and maxillary arch bars (fig. 1). The patient was seated in the dental chair and good lighting was used. The nurse required 45 seconds to remove the fixation so that the patient could open his mouth.

A dental intern with no experience in the treatment of fractures was asked to remove the fixation of another patient. This patient had two intermaxillary wires in addition to intermaxillary

elastics attached to mandibular and maxillar, arch bars (fig. 2). The time required for the dental intern to remove the intermax illar, fixation was 42 seconds.

A third patient had three internavillary elastics attached to bicuspid fry wire loops on the right side, and a single intermaxillar, wire on the left side (fig. 3). The patient was given crown and bridge scissors, placed in front of a wall mirror, and told to cut the wire and rubber bands so that he could open his mouth as quickly as possible. He required five seconds to cut the elastics and an additional 21 seconds to cut the single wire

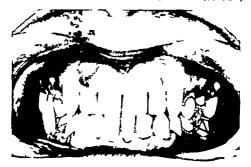


Figure 2. Two intermaxillary wires in addition to intermaxillary elastics

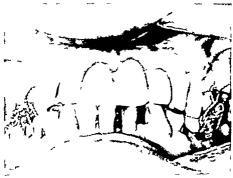
A fourth patient had Gilmer type wire fixation attached to the four bicuspid teeth (fig. 4) This patient, though using crown and bridge scissors of the type frequently given patients with inter maxillary fixation, was unable to cut a single wire A trained dental technician, using wire cutters, cut the fixation in 13 seconds

A NEW METHOD

A method for simple, quick removal of intermavillary fixation was therefore desired. One method, similar to the cotter key method, and found to be satisfactory, makes use of a 20-gage hypodermic needle as a "rip cord" Such a rip cord arrangement.



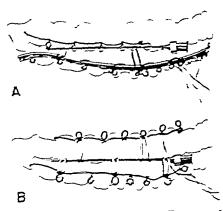
F gure 3 Intermaxillary fixation of the ela tic



F gure 4. A G limer type use fix tions

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PROCEDURE

There are a number of confinations of wining ann finition any finities to which he will confirm the could be applied. The predict of which we will in intensity daying an arm can attached to one arm and wire looks those on the well of the concerning arm. The prime are recovered from two Storings broadening predicts are the end made of time and hamilest to this use. The results are the intensity to the results are though into confirming. First are astenance to the arm has, drough among the results are as the time of the arm of heart density first is secured to the him of the

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needles and allowed to hang from the patient s mouth When the cords are pulled the needles slip from between the wires en abling the patient to open his mouth (fig. 5A)

If elastic traction is used the elastics are placed first from one arch to the other in the usual manner A needle is then placed between the buccal tissue and the elastics The elastics are then alternately removed from one arch bringing the elastics over the needle and attached to the opposite arch (figs 5B and 6)



Figu 6 I t m xill ry la tic f x t on t l g tb p cord fo mergen y r lea of mmobl at n.

The minor inconvenience of the needles is well tolerated by the patient when he realizes that because of them he will be able to open his mouth promptly if necessary. The patient should thoroughly understand the reasons for the use of such an appliance and be instructed not to remove the needles except in an emergency.

While serving with the First Manne Division in Korea I used the rip cord type of fixation on seven patients. Prior to their being transferred each patient was asked to pull the rip cords to be sure of proper function. When wire fixation was used the patients were able to pull the rip cords and open the mouth in what seemed to be a fraction of a second A somewhat more vigorous pull was required to remove the fixation when elastics

were used. In no case, however, was more than five seconds required to remove the fixation and open the mouth.

SUMMARY AND CONCLUSIONS

Because air evacuation of casualties is becoming more and more the transportation method of choice, it is increasingly necessary to consider the problems of nauses and recurrentation oc casioned by motion sickness in patients with immobilized jaws

It is evident that in the event of motion sickness and nausea even trained personnel require a dangerously long period of time to relieve immobilized jaws Every precaution must be taken to provide opportunity for the earliest possible release of immobilization appliances in these emergencies. The device described herein, a 20-gage hypodermic needle used as a "rip cord" in the manner of a cotter key, allows satisfactory fixation and provides the patient with a simple, quick method of removing the fixation if necessary

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ESOPHAGEAL SPEECH FOLLOWING LARYNGECTOMY

A person confronted with the advice of laryngectomy is naturally disturbed not only by the knowledge that he has cancer but also by the fact that the only means of successful treatment entails loss of his voice forever. How will he be able to work and communicate with his family and friends? This is so upsetting that not infrequently the patient is anxious to seek another form of treatment even though the chance of cure be less Fear of loss of the voice has too frequently caused a patient to accept less than he needed in treatment and has influenced a physician toward conservatism later to be regretted Laryngectomy is not to be feared to the degree inasmuch as useful and adequate vocal rehabilitation may be attained in a few weeks with a little work Esophageal speech can be learned readily by any one who can swallow and belch under control

> -NORMAN JESBERG M D ın Calıfomia Medicine P 80 Feb 1954

CIRCUMCISION OF THE NEWBORN INFANT IN THE DELIVERY ROOM

ERNST R MOELLER C mm nd (MC) USN EDWARD M MOSS L t nant (MC) USNR

In THE past 24 months about 2 400 newborn infants have been circumcised in the delivery room of this hospital prior to transfer to the nursery Hovsopian and Miller and Snyder reported a similar policy with satisfactory results

During the past decade the unprecedented and progressive increase in the birth rate and the nationavide demand for hospital maternity care together with the shortage of beds and nurses have created serious professional and administrative hospital problems. The expansion of large central maternity nurseries with overcrowding and an inadequate number of attendants has increased the hazard of infection. Just as many of these factors have served to give impetus to the practice of early ambulation of post-partum and surgical patients they have of necessity eaused a reconsideration and evaluation of many previously established and static practices. We altered our practices where possible to keep our patient consus at a minimum decrease the hazards of infection and conserve the time of our personnel.

The increased demand for circumcision of the nowborn by the wast majority of parents posed many problems for all members of the medical and nursing staff. The period of hospitalization for normal post partum patients and newborn infants was variable usually three to six days depending upon the availability of beds. This created a problem in the scheduling of circumcision 24 hours provious to the mother s discharge if the mother had to be discharged earlier than anticipated a last-minute surgical procedure would be necessary before leaving the hospital or else a return trip to the outpatient department at a later date by both the mother and the infant. This resulted in undue hard ship because many of our patients lived beyond a 50 mile radius

In addition to the scheduling difficulties nursery and other personnel expended considerably more time in the proparation of circumcision packs and assisting in the procedure Further more the reducal officer assigned to perform the circumcision would of necessity invade the already crowded nursery or the

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patient would be transported to and from the nursers to the sec lected surgical suite. The redical officer would be required to prepare both himself and the patient for the operation and ans unavoidable delas in his arrival be other urport duties would only entail loss of valuable time for his assistants

Study of the problem suggested the practicability of early new natal or delivery room circumcision as a partial solution, i e to conserve tire for the redical officer and nu sers stall and to simultaneously minimize the dangers of infection by decreasing traffic to and from the nursers

PROCEDURE

The simplicity of this method is noteworthy Upon hospital admission the expectant mother signs an operative permit, povided she desires circumcision in the event she delivers a male infant When circumstances demand hurried transfer to the de livery room, signature is readily obtained post partur, because from 30 to 45 mg of piperocaine hydrochloride (retycaire) is usually administered for saddle block anesthesia. The attending obstetrician then performs the circumcision after the cord is ligated and after it is determined that the infant is a normal. healthy male

The infant is transferred to the accessors table used origin ally for the sterile drapes and towels required for delivery. The infant may be strapped to a circumcision board or held by an attendant (Ne have favored the latter method) The corps ran or other attending assistant extends his hands and arms beneath the sterile drape and above the table to hold the legs in slight flexion and moderately abducted The previous aseptic manage ment of the newborn infant dispenses with the need for either skin preparation or sterile drapes for the operative field Lither the Gomeo clamp technic or dissection and amputation of the foreskin is performed a choice entirely dependent on the method preferred by the attending physician Fither method takes but a few minutes. The Gomeo clamp procedure was used in about 80 percent of our patients and dissection in the remainder The results obtained have been uniformly excellent. There have been no cases of infection in this series, nor have there been any cases of excessive bleeding, which occasionally occurs when the procedure is done on the fourth or fifth day of life

If for any reason, any distress is present, the operation is deferred until a later date Also, if it is the opinion of the attend ing physician that circumcision is contraindicated because the infant was slow to breathe normally or cry lustrly, the procedure is deferred until a later date. Other conditions of deferment are prematurity, evidence of developmental defects, and potential erythroblastosis fetalis

The number of circumcisions done in the nursery on the fourth day of life is now less than three percent of the total circum cisions done. This figure does not include the premature infants.

It is not the purpose of this article to discuss the advisability or nonadvisability of performing a circumcision. This has been discussed many times previously and the literature is filled with articles both pro and con. The majority of the parents of our newborn male infants requested that circumcision be done

We believe that this procedure is of value for the following reasons

- 1 Conservation of valuable time for the medical officer and the nursing staff because of (1) availability of the infant (2) avoidance of need for additional storile pack setup (3) avoidance of need for skin preparation and draping of the operative field (4) employment of only delivery room personnel during the period immobilization associated with post-partium observation of the mother (5) avoidance of the surgeon's preparation for the operation and (6) lack of demand upon nursery personnel for assistance in the operation
- 2 It decreases the number of personnel entering the nursery who are not intimately associated with the care of the newborn infant. This decreases the possibilities of introducing infecting organisms into the nursery.
 - 3 Reduction in the possibility of hemorrhage

Grossman and associates collected data on 21 normal newborn infants which revealed that whole blood clotting time during the first six hours of life ranged from seven to 38 minutes with an average of 14 minutes. On the third day they found that the clotting time was 10 to 60 minutes with an average of 25 minutes and on the fifth day of life it ranged from six to 38 minutes with an average of 16 minutes. The platelet values of their patients were all within the adult normal limits The prothrombin concentration showed a wide variation of patterns typically high on the first day low on the third day and high on the fifth Grossman studied the prothrombin level by the Quick method and noted a drop in the normal level after the first 24 hours of life which did not rise until the third d y Smith summarized several con tributions regarding hemorrhagic diseases of the newborn infant and noted the normal prothrombin level at buth. This level then fell for the first three days of life and did not return to normal until the seventh or eighth day of life Sturgis likewise showed that the prothrombin level of umbilical cord blood at birth is not again achieved until the seventh day of life Waddell and Guerry' showed that prothrombin de ficiencies most commonly occur between the ages of 48 and 72 hours The systolic blood pressure increases from 60 mm Hg at birth to 80 mm Hg at the end of the first week

- 4 The infant is observed by trained nursery personnel during the postoperative period. This results in early detection of in fection with resultant early therapy if occasion demands.
- 5 The mother is spared the concern over an open wound be cause the circumcision is healed by the date of discharge, thus an important factor in parental anxiety is eliminated

SUMMARY

This article describes our experience with 2,400 circum cisions in the newborn infant in the delivery room immediately after birth. The value of this procedure is due to conservation of time for medical officer and nursing staff, and reduction in the possibility of hemorrhage or nursery infection.

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The use of cortisone and ACTH in rheumatoid arthritis some types of allergy rheumatic fever and several other diseases may create an endocrine disturbance in many of the patients. One aspect of endocrine disturbance resulting from the use of these agents is depression of adrenal cortical function. Hence the anesthesiologist must familiarize misself with the use and abuse of these hormones because it is a fact that patients can reach the operating table particularly in emergencies and many times in elective surgical operations without the surgical team realizing some factors that should be known in advance.

-JOHN'S LUNDY M D
in Anesthesiology
P 376 July 1953

A SIMPLE TECHNIC FOR BRONCHOGRAPHY

DAVID E THOMAS L t nant Colon I MC USA

E XPERIENCE at various overseas hospitals has revealed that frequently a patient not eligible for evacuation requires a bronchogram for evaluation Often there is no one available who is capable of performing the technical aspects of the procedure Actually with a minimum of equipment scripulous attention to detail and an appreciation of the hazards in volved any physician can obtain adequate bronchograms

With this in mind, I believe that a complete description of the routine method of bronchography used at this hospital will serve a worth while purpose Its advantages are that (1) a minimum of equipment is needed (2) no special otochinolaryngologic training is required (3) the procedure can be performed rapidly and (4) tracheal catheterization is not required

PROCEDURE

Premedication of adult patient consists of the administration of 2 gram of secobarbital (seconal) one hour before appointment of 0006 gram of atropine sulfate and 004 gram of codenne sulfate 45 minutes later Nothing is taken by mouth for at least six hours prior to the procedure and postural drainage on the ward precedes bronchography

With the physician protected by two masks and the shield illustrated in figure 1 topical anesthesia is obtained with a two percent solution of cocaine in peppermint water The oropharvnx is first anesthetized by spraying with an atomizer In this clinic a compressed air atomizer is used but a hand atomizer is an acceptable substitute. The patient holds his tongue with a four by four gauze sponge in the left hand and is instructed to breathe through his mouth Because the spray will generally cause him to gag he holds an emesis basin lined with cleansing tissue in which he expectorates and is supplied with additional tissue with which he wipes his mouth. He is instructed to ex pectorate, not swallow the medicament Spraying is repeated until the throat feels numb A small cotton sponge dipped in the cocaine solution is then introduced for 10 seconds in each pyri form sinus with the laryngeal forceps Following this step the eniglottis is visualized with a laryngeal mirror a curved malleMarch 1955)

able silver laryngeal cannula on a 3-cc syringe containing 2 cc of the cocaine solution is introduced over the epiglottis, and the epiglottis is gently drawn forward by the cannula. This impinges the epiglottis against the back of the tongue and exposes the glottis The patient is instructed to take a deep breath and, when the vocal cords abduct, the solution is injected. This maneuver commonly stimulates a bout of forceful coughing. This step is repeated twice more. If swabbing of the pharynx with a

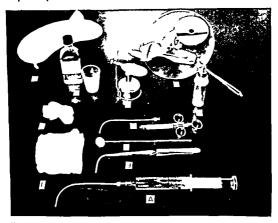


Figure 1 Equipment regulated for bronchography available through the Armed Services Catalog of Medical Materiel (A) Curved laryngeal cannula, 30-cc services tatitude of memoria materies (n. Chronic tarymeol cumsuld, 30-cc syringe and sodized oil (B) Laryngeal forceps (C) Laryngeal mittor (D) Lucr syringe control 3 cc. (E) Devilhass as compressor atomizer of medicinal band atomizer (not shoun) (F) Alcohol lamp (G) Two-percent solution of cocaine bydrochloride and medicine glass (H) Cotton suabs. (1) Four-by-low sponges (1) Head murror and headband attached to locally procured plast c face protector (K) Kidney basin with cleansing tissue.

moist sponge indicates that the gag reflex is still present, the spraying procedure is repeated It should be emphasized that thorough sensory anesthesia is required in order to abolish the cough and gag reflex As much as 40 cc of the cocame solution is sometimes required.

The patient is then placed in a lateral position on an x-ray table which can be tilted He leans on his elbow on the side to be filled, the head is retracted forward and placed as near the 342

vertical position as possible the chin is tilted upward and the tongue is drawn forward by an assistant The patient is instructed to breathe slowly and deeply through his mouth, and under no circumstance to cough or swallow A laryngeal cannula attached to a 30-cc syringe containing 25 cc of a 40 percent solution of lipiodol is placed by feel over the epiglottas The lipiodol, which has been chilled for two hours in a refrigerator, is injected (fig 2) It will run through the glottis and trachea to the de-



Figu 2. 1: ton of I piodol to tl e ght bron h I t ee

pendent bronch: If the patient does not awallow the injection can be stopped at 15 to 20 cc depending on the size of the patient

With the lung containing the lipiodol dependent at all times the patient is placed on his side on the x-ray tilt table With assistants holding him in place the table is tilted almost to the vertical and rapidly returned to the horizontal this maneuver is repeated twice more with the patient rotated 45 degrees from the initial position both dorsad and ventrad (fig. 3)

Posteroanterior lateral and oblique roentgenograms of the thorax are promptly obtained with the patient standing (fig 4) If bilateral mapping is desired the contralateral bronchial tree is injected lipiodol distributed in an identical manner and posteroantenor and oblique exposures are obtained

Postural drainage with tussive squeezing is employed while the films are rapidly developed. If inspection of the films reveals an important area of the bronchial tree not outlined, injection is repeated, the patient is positioned as required to ensure filling of the desired segment, and further films are obtained. This is seldom necessary.

Upon return to the ward, postural drainage with tussive squeez ing is repeated for one hour



Figure 3 Positioning and tilting of the patient to distribute lipiodol

COMMENT

Many physicians believe that bronchograms obtained without fluoroscopic control of the distribution of lipiodol are inadequate It must be admitted that, under fluoroscopic visualization, with the use of a catheter through the glottis, it is possible to obtain the desired bronchograms without using as much lipiodol, and the procedure is more specific I have had excellent results with the outlined procedure, however, and the necessity of repeating bronchograms because of inadequate filling or other

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technical deficiencies has been a distinct ranty. Also the time factor and amount of exposure to roentgen rays are matters worthy of consideration in a clinic with a heavy workload



F gu 4 Bonchogram obtas d s g th describ d tech c N t ext bron bi ta and exc lle till g i the upp lobe

It is realized that up to 40 cc of a two percent solution of cocaine for anesthesia represents an excessive dose. Over half of this medicament is exhaled in groplet form or expectorated and the actual amount of cocame absorbed by the patient is not known There have been no serious cocaine reactions in the several hundred anesthetizations performed since I have been associated with the endoscopy clinic No specific therapy has

been required for the few minor reactions which have occurred A 30-cc syringe of a 2 5-percent solution of thiopental sodium (pentothal sodium) and sufficient instruments for immediate thoracotomy are kept on hand in case of a major catastrophe. I have had no experience with combining a detergent, glycerin, and a vasoconstrictor with the local anesthetic and applying the mixture by aerosol spray Miller and co workers' reported that this method greatly reduced the amount of the drug needed for adequate anesthesia.

A tilt table is not an absolute requirement for obtaining good results Any flat surface tilted to 45 degrees or more, combined with a positioning of the patient so that all segments are filled, will serve the purpose it should be emphasized that positioning, tilting, and exposing should be done rapidly in order to avoid alveolization increasing the viscosity of the lipiodol by chilling is of advantage in this regard

SUMMARY

A simple method of bronchography described herein can be performed, rapidly and with a minimum of equipment, at remote installations where evacuation is not practical or the indigenous population is being treated Close attention to the steps of the procedure will result in adequate bronchograms being obtained.

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THE FOREMOST MEDICAL PROBLEM

Although some nations of the world still have pressing problems of communicable disease and life expectancy rates vary from nation to nation the trend in all nations is to a greatly increased life expect ancy—tesulting throughout the world in an aging population As a result the foremost medical problem in many parts of the world is no longer the communicable diseases which claimed their victims with dramatic swiftness but the slow insidious processes of the chronic diseases and the disabilities that they leave in their wake

⁻HOWARD A RUSK M D
in New England Journal of Medicine
p 232 Aug 6 1953

PREVENTION OF RECURRENT ORAL VINCENT'S INFECTION

Education of the Patient

THOMAS D GILSON Comm d (MC) USNR

VINCENT'S infection or trench mouth" long has been a dental problem in the world's military forces Prinz and Greenbaum have chronologically related the early reports nearly all of which described outbreaks of the disease in armies. The works of Pindborg's and Hester and associates' called attention to the continuing problem of the occurrence of this disease in personnel of the armed services they as well as Schlugger believed that the hazard of acquiring this infectious process in its original acute phase is greatly increased while serving on active duty with the military service.

Workers are in general agreement regarding the systemic factors believed to be contributory in the weakening of individual resistance to the invasion of organisms producing the disease Several of these factors are of such a nature that active duty in the armed services might intensify them to the extent that other things being equal this very intensification could account for the preponderance of the disease in persons in the service. The following appear high on many lists of systemic contributory factors physical exhaustion and emotional tension general run down condition and emotional and physical strains? all of which are conditions frequently experienced by servicemen

It is also generally agreed that after treatment of the first acute attack of Vincent's infection in spite of the use of various drugs and repeated thorough cleansing of the gingival crevices by both dentist and patient there is still a great likelihood of either a recurrence of the acute phase or a retrogression into a subacute or chronic state.

Goldman stated "One of the most important but least recognized causes for recurrence is the saucer shaped interproximal area resulting from a primary attack. The architecture of the interproximal tissues does not allow for the deflection of food during mastication. Thus with the packing of food the crater becomes larger and there is a loss of tissue tone resulting in reinfection. This condition can only be rectified by surgery.

Fah lAir Sta n, Thidbey [lad T h

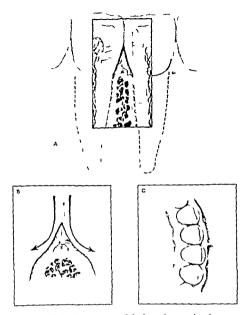
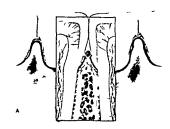


Figure 1 (A) A schematic vi w of the lower front teeth and gums in a healthy mouth a seen from the front. The cut away area shows the roces embedded in bone with the overlying gum tissue filling the space between the teeth

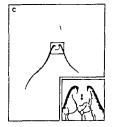
(B) A draw ng of the same at a as een from right angles to view (A) or a section between the front teeth Left in this drawing is toward the lip and right s toward the tongue. The gum again fills the space between the teeth in the drawing and comes to a sharp peak up to the point where the teeth touch each other represented in the drawing by the white oval musd ately above the peak.

The arrows indicate the path of food which slips around this contacting point during eating. Notice that the shape of the gum tissue between the teeth is such that food naturally is shed away from this delicate attachment of gum to root making the area between the teeth relatively self cf ansing.

(C) A top v ew of the lower front reeth







Fgur 2 (A) A h ma w mil to fgur 1 how t how e nd ton of ut V et nf ton or er h Th mouth ery or the gum bld ily and the p t nt ha pe I met II tast h mouth t th t me Not that th g ms wh h ca hed s ha eat n w y he t p of the p k of gum is betwee the teeth ad that the gams willen add bow has k of the tath

(B) A dr w g of th dise e proc ewed t ght gl to (A) Not c g hat the point of gum that us d fll th p between th t this be g roded wy by th ction of the dis s ge ms

After pope t time t feb dis n th ut t g the gum will heal in d formed wy n n dr w g (C) Th pe k of gum t wh h us d to f ll th sp p th ont cring po nt is changed o that the tree gon and up-hpdt pat

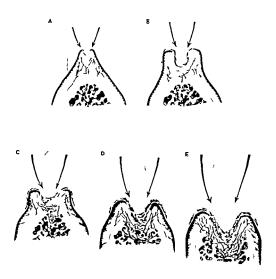
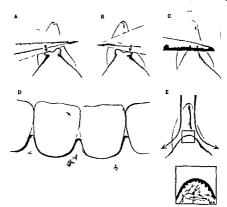


Figure 3 These drawings illustrate the changes in the gums if nothing is done to alter the cup shaped deformity resulting from the acute attack of "trench mouth" The arrows indicate the packing of food into this del cate area each time that it is chewed This constant packing of food will cause the "cup to become progressively deeper until the bone is aff cted. The gums lose their tone and the chance that the rich mouth gems will again invade the tissues is greatly increased Either another acute attack with soreness and bleeding will occur or the disease will go on in a low grade way gradually destroying the structures with little more discomfort than the packing of food between the teeth will produce

To prevent either of these forms of relapse from occurring it is necessary for the patient to care for his mouth in a very particular way for everal months. The cup between the teeth must be changed into a convex shape again to prevent recurrence of the Vincent's processes which if not prevented will be responsible for the early loss of the featurent's reeth.



F gur 4 (A) nd (B) llustr t h w bbe t pped 1 t d 1 t m lator hold be trod ed d ly betw th t th for g th 1 p f the policy for the children was a compared to the policy for the children was a compared to t teeth f m the h k d nd then lkw f m th t gue d ommend d Th will qur ghly 30 mu tsady Maypt t gth tmlator d whi

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(C) illustr t prope ft me 1 1 ig f th pc betwe the t th with the und toothp k or p sal bals wood ! wh has labl to tdr g tore The tt a p ferabl b use th wood is f nd the shap of the bal wood t k uch the t forc t the pa betw the then tonly me the food but easpe us othelp fah cpah meam

Draw g (D) and (E) p ctur th gum me m th cor ton of the ppg ath p betw the the complt. The cphabeen hagd ato on h pe ad food log for bly coped int the pees between the the The the hygine ea in chl sdff ult of th

Continuation of the use fith t k t I th aft meal is c mmend d and th f the bbe tpd ly fo om what hort pe od e cour e d t ke p the gum furm nd h althy

Schaffer's¹² work sheds some light on the character of the "saucer" because in several patients who had recovered clinically, biopsies after treatment revealed areas with incomplete epithelial covering and "microscopic breals still were present."

Supporting Goldman's contention that surgical intervention is necessary to correct the deformity in the embrasures, Eustace's laments the unlikelihood of general adoption of such long operative procedures in British armed forces during the war. This possibility is extremely remote in view of the number of cases occurring, and from my observation of the attitude of many dentists in the service such approaches to correction are the task of a periodontist

Chace¹¹ stated the problem and offered a solution more compatible with armed services capabilities when he made this observation "Architecture of the interproximal tissue is seriously changed so that food particles are not deflected during mastication. Food accumulates in the area and the saucer becomes deeper If the bone is not affected, proper contour can be usually restored by packing and the (patient's) faithful use of an interdental stimulator" (italics added) here and Gilson¹⁴ are of the same opinion

The purpose of the accompanying figures and their legends is to provide convenient material in printed form for making clear to the patient the importance of his role in reshaping the interpreximal tissues to prevent recurrence of the Vincent's disease in any form (figs 1 4)

The patient must be taught (1) to use an interdental stimulator so that he will, over a period of time, produce pressure atrophy of the edges of the saucer on the facial and lingual sides, and (2) to thoroughly cleanse the cervical portion of the embrasure after each meal

The legends are written in lay language in the hope that the illustrations in the article may serve to educate patients Verbal explanations with the original drawings have been very en couraging, and patient co-operation in self-care procedures has been greatly enhanced

SUMMARY

This article presents a short justification and plea for the publication of the accompanying schematic drawings and leg ends for distribution to dental patients as an aid in the prevention of recurrence of Vincent's infection

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16 K D A dGl CMP nal

TREATMENT OF GRIEF

It is only far ly that a doctor is asked to tr at a problem in grief Our therapeutic emollients are uncertain and tremulously administered We esc pe if we can Until the signs and symptoms and the natural course of bereavement are more thoughtfully examined we rem in unable to help in any plan f r a constructive and reasonably happy order of living Although we may not be able or even invited to carry through to a cure doctors may shelter a mind during the first shock of be reavement. Here medicines play a part and the concept of sedation needs to be cleared Warnings against barbituri m now prevalent in lay writing have become misleadi g unless the real use of the drug as a temporary stay on an emotional explosion is explained. In a be wildered and dipleted person it is charitable and wise to subdue the mind unt I thoughts are assembled in a more orderly fashion. Nor does the need for such an interruption constitute a censurable defect in the intellectual structure of a patient. The proper use of sedatives over a period of everal weeks may be a real medical contribution

> -THOMAS N HORAN M D H p H ptal B ll t n. p 124 M v f 1954

RIFLE SLING PALSY

HASCALL H MUNTZ Captain, MC USA
RALPH & COONRAD Captain, MC USA
ROARY A MURCHISON Colonel MC USA

TRANSIENT peripheral nerve palsies as an occupational hazard peculiar to certain military duties have been described in the past. Examples are bombardier a palsi and palsies from pressure of the shoulder pack in infantrymen. This report presents a series of patients with peripheral nerve paresis in the left upper extremity attributed to the use of the rifle sling during basic training (figs. 13)

The subjective complaint of the soldier with rifle sling palsy is often the "stocking glove" type of anesthesin observed in a hysterical person In mild cases, a high index of suspicion and obtaining a careful history are necessary to make the diagnosis. The patient with moderately sovere symptoms will present sufficient objective neurologic findings on the first examination to confirm the diagnosis.

Early in 1953 three patients reported to the outpatient dispensary with nearly identical complaints of numbness and weak ness of the left arm but gave no history of recent disease nor of other associated systemic symptoms. Neurologic examination other than that limited to the left arm was normal

A survey of the literature disclosed no previous description of injury due to the use of the rifle sling Questioning of infants officers in the training groups was not fruitful in disclosing any known effect of its use on the present or previous groups of trainees Because of its transient nature and possibly because of its nondescript symptoms the entity had not been brought to their attention

Medical officers who had served in basic training camps were questioned and were unaware of any nerve palsy of the upper extremities occurring in trainees however, brachial plexus pal sies of "unknown" cruse had been observed

Once this syndrome was brought to the attention of the dis pensary physicians, 18 more patients who had reported to their dispensaries without solicitation were quickly diagnosed and referred to the orthopedic clinic of this hospital

Fm U S. Army H sp tal Camp Chaff Ak. Dr Mu tz ow at 938 H p tal



F gur 1 R flema n the prone p s tion. F the sake of clarity the patient I tique jacket ua nov d. It is bel ved the jacket ha a tende y to the pre w over the axillary heath by t natur I foldig in this region.

These patients had one or more of the following objective findings (1) Disseminated muscle group paresis involving those muscle groups supplied by radial ulner and median nerves



P gure 2 R fl md in the itti g position.

(2) sensory changes involving cutaneous distribution of the radial, ulnar, and median norves, (3) occasional vascular and/or norve phenomena manifested by objective and subjective temperature changes, (4) vasomotor instability manifested by skin



Figure 3. Rifleman in the standing position.

color changes with changes in atmospheric temperature, (5) petechiae, and (6) desquamation of skin at the site of pressure (fig 4)

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At the time of the initial examination the paresis had been present from one day to three weeks. All patients recovered fully



F gure 4. App ar nee of arm after removal of isl lg h te d squamati n of km at the ite of pr mre.

Three patients had complete radial nerve palsy and five had partial palsy involving one or more of the major nerves of the arm (table 1)

Physical findings included well defined sensory and motor changes of the involved nerves Because the patients were all right-handed the upper right extremity was not involved. The sling applied as illustrated and as described in FM 23 5 Para graph 87 automatically tightens with continued use It is well known among firing range instructors that the most important

aid to accuracy is a tight sling boot 500 trainees were observed on the firing line and mans were found to have a cyanotic or blanched, and often pulsoless, hand and wrist while firing

TABLE L. Duration of rifle sline palsy in 18 soldiers from 19 to 21 years of age

19 to 21 years of ale											
Patient	ravolved /erve	Extent of torol rement	Time to full recovery (days)								
1	Median-ulnar	Partial	21								
2	Radial	Complete	3								
3	Radial	Panual	5								
4	Radial	Complete	,								
5	Radial	Partial	7								
6	Radial	Panual	12								
7	Radial	Partial	2								
8	Mediamulman	Partial	3								
9	Radial	Partial	10								
10	Mediam-ulm	r Partial	1								
11	Ulmar	Partial	6								
12	Radial	Partni	4								
13	Radial	Partial	4								
14	Radial	Partial	3								
15	Median- nlnar-radi	al Partial	3								
16	Radmi	Partial	6								
17	Radial	Complete	2								
18	Radial ula	ar Partul	3								

The soldier photographed here suffered a severe palsy of all three nerves. He recovered in three weeks and we were able to precipitate palsy with a tight sling again in less than one hour, with three-minute breaks every 10 minutes Recovery from the second episode was nearly complete in four days

We examined 488 men divided into two nearly equal groups, who had been firing four hours on the 1,000-inch range

Of these 130 had mild neurologic symptoms consisting of paresthesias Sixty one had petechiae and six had definite weak ness in the musculature supplied by the radial nerve These men were examined in groups of about 40 in their barracks four and 10 hours after firing This was done without previous knowledge of the trainees or their instructors, to rule out the possibility of mass suggestion or any change in firing technic in the various platoons No significant differences in symptoms were found among the various groups

All patients recovered spontaneously without treatment

SUMMARY AND CONCLUSIONS

The findings of paresis or total paralysis of one or more nerves of the upper extremity in a basic trainee who recently has been or is on the rifle training course should suggest the possibility of rifle sling palsy Prevention may be accomplished by using a fixed loop sling

and by frequently loosening the sling when changing clips or examining targets Recovery may be protracted if this injury is not recognized early

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ADDENDUM	S	ce	th	t cl	WE	W	tte	bout 45	mo	ldı	w th
th audem h		١.		ramin A							

THE TREATMENT OF LEUKEMIA

The outlook for progress in the treatment of the le kemi s would seem to be excellent Although it appears unlikely that any marked improvement will be achieved in the results obtained by radiotherapy alone the many new chemotherapeutic agents which have been devel oped for the treatment of this disease in the past ten years suggest that newer and far better agents will be developed in the near future The probable avenues of progress in chemotherapy are (1) the devel opment of new agents with more prolonged therapeutic effect and applicability to a wider spectrum of leukemias and (2) the prevention of the development of resistance to agents now in use. This latter may be accomplished by a better understanding of the fundamental mechanisms of the development of resistance to various chemothera peutic agents or by the employment of combination therapy using several chemotherapeutic agents simultaneously or combined irradi ation and chemothe any n an empiric attempt to prevent the development of such resistance

> -IOSEPH H BURCHENAL M D Bllt fib Nw York A d my of M d c ne p 444 J 1954

MEASUREMENTS AND RECORDING OF JOINT FUNCTION

JOSEPH & BATCH Colonel MC USA

M UCH misunderstanding and confusion exists with respect to joint motion, especially what it comprises and how it can be measured and recorded. This is because of the many rethods which have been proposed to reasure and record joint motion, without due consideration of the anatomic structure and physiologic function of the part concerned.

To be of value the system employed must be simple, readily performed, and understood by all. The method which seems to most nearly satisfy these criteria in principle is that described by Cave and Roberts 1 it is this method in general which will be described illustrated, and elaborated on

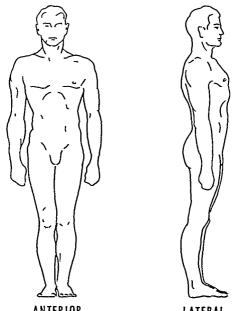
As pointed out by these authors "(1) All motions should be measured by degrees from a neutral point of zero (2) The neutral point from which motion is measured must be defined (3) It is always worth while to mention the comparative motions in the joint of the opposite limb (4) Angles should be measured with a goniometer or protractor (5) Motions of joints above and below the affected part should be measured "1

A definition of these criteria, the movements to be anticipated the normal range of motion, and the best neutral position for comparison of this range of motion in each joint either actively or passively requires further consideration

The most logical position of joints to be considered as the neutral point or zero from which motion takes place is the normal anatomic position of these joints. In this position, the person is standing erect with his feet straight forward, the upper extrem ities are straight by his side in this position, all joints are in extension which, for practical purposes, will not be considered a type of motion but rather a point from which motion and function take place (fig. 1)

Although there is an average normal range of motion anticipated for each joint, variations exist so that comparison should be made with motion in the comparable joint on the opposite side. The ranges of motion cited in this article are considered average for each joint as stated but may vary slightly from other published

figures In principle the method employed and the measurements recorded are similar to those on Standard Form 527 Bureau of the



ANTERIOR

LATERAL

Feu 1 Anatom tral to tron.

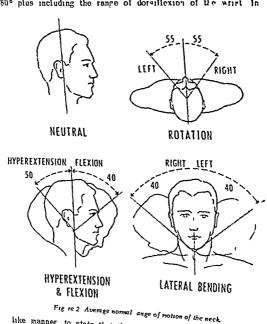
Budget, May 1950 It differs in that each movement of each joint is recorded as such and the average limits of that movement are recorded in a more detailed and complete manner

Both the active and passive range of motion should be ac curately reasured in degrees using a goniometer and the results recorded on a form

for the cheaten

Some methods of measuring a type of joint rotion a cribe a

range greater than 180° Such a measurement is urphysiologic and consists of corbining two separate types of rotion for ex ample, to state that the west extends from 110° to 215° is including a return from volar flexion to the extended position of 180° plus including the range of dorallexion of the wrist in

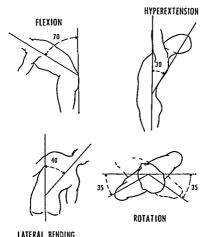


like manner to state that the hip extends to 225° is including the range of hyperextension of the hip when, for one reason or another, a joint cannot return to its normal extended, neutral, or zero position, it should be recorded as so many degrees of per manent flexion abduction, and so on for each type of joint motion

VECK

The neutral position for the neck is with the head up and the chin in which corresponds to the extended position of zero 362 U S ARMED FORCES MEDICAL JOURNAL

Movements From the neutral position movements which take place are rotation flexion hyperextension lateral bending and circumduction Rotation to the right and left takes place primarily at the articulation between the first and second cervical ver tebrae and to a lesser degree in the articulations between the remaining cervical vertebrae Flexion or forward bending hyper



F gur 3 A we ge ormal range of motio of the pin

extension or backward bending and lateral bending to the right and left are a result of the sum of motion in articulations between the skull and all the cervical vertebrae in the sagittal and coronal plane circumduction a succession of all the above movements

Position and Measurement The patient is seated on a chair with his back to the examiner

Rotation is obtained by having the patient turn his head to the right and look first over his shoulder, then to the left and look over the other shoulder Rotation is measured as the angle formed by a line on the sagittal suture of the skull rotating at the axis of the neck. The average limit of rotation is 55° to the right and to the left.

Flexion is obtained by bowing the head forward and placing the chin on the chest. Floxion is measured as the angle formed by the forward bending of the head from the neutral position. The average limit of floxion is 40°

Hyperextension is obtained by bending the head backward so the patient is looking at the ceiling Hyperextension is measured by the angle formed by the backward motion of the head from the neutral position. The average limit of hyperextension is about 50°

Lateral bending is obtained by bending to the right then to the left, approximating the corresponding ear to the shoulder Lateral bending is measured by the angle formed at the axis of motion by the new position of the neck from the neutral position. The aver age limit of lateral bending to the right and to the left is about 40°

SPINE

The neutral position for the spine is with the patient standing erect evenly on both feet, with knees straight hips, polvis, and shoulders level, abdomen in, chest out, pelvis rotated in under vertebral column, chin in, head up, with a perpendicular line of weight bearing passing through the mastoid process across the greater trochanter and tibial tuberosity to the base of the fifth metatarsal. The lumbar and dorsal portions of the spine are practically flat, although the curves can be identified. There is no marked lateral curvature although, normally, there may be a slight lateral curvature with the convexity to the right. The Achilles tendons are perpendicular to the ground

Movements From the neutral position, motions of the spine are flexion hyperextension, lateral bending to the right and left, rotation to the right and left (fig. 3), and circumduction These motions are a result of the sum of motions which take place at the articulations between each of the vertebrae in the sagittal, coronal and transverse planes respectively. Because of this, accurate measurement is difficult Motions should be compared with the normal for the individual person considering age and habits. Alterations in the lumbar and dorsal curves should be noted in both the posteroanterior and lateral planes to determine flattening or reversal of these curves.

Position and Measurement Motions of the spine should be examined with the patient in the standing sitting and lying positions. The sitting position removes the influence of the ham string muscles on the polivis. The lying position aids in more accurate localization of pain and an evaluation of muscle tone.

Flexion is obtained by having the patient bend forward to the limit of function. Flexion is measured by the angle formed by the spine at the axis of motion by the new position of the spine from the neutral position. The average limit of flexion of the spine is about 70.

Hyperextension is obtained by the patient bending backward to the limit of function. It is measured by the angle formed at the axis of motion by the backward bending of the spine from the neutral position. The average limit of hyperextension is about 30

Lateral bending is obtained by having the patient bend to the right and to the left to the limit of motion. It is measured by the angle formed by bending the spine to the right and to the left from the neutral position. The average limit of lateral motion to the right or to the left is about 40

Rotation is obtained by the examiner fixing the pelvis with his hands and having the patient rotate the body to the right and to the loft. It is measured by compriring the angle made by plane of the shoulders with that of the pelvis. The average limit of rotation of the spine to the right or to the loft is 35.

SHOULDER

The neutral position for the shoulder is with the spine erect and the arms hanging straight down by the sides. This corresponds with the extended and adducted position of zero degrees

Movements From the neutral position motions which take place are abduction lateral elevation flexion forward elevation hyperextension internal and external rotation in the neutral position internal and external rotation in abduction (fig. 4) adduction accremination Movements at the shoulder joint take place between the head of the humerus and glenoid cavity of the scapula together with scapulothoracic acromical vicular and stemoclavicular motion Once 30 of abduction or 60 of forward flexion is obtained the relationship of humeroscapular motion remains constant of two humeral to one part scapular motion. Four degrees of elevation of the clavicle takes place for every 14 elevation of the arm up to 90 and none thereafter About 20 of motion takes place in the acromic-lavicular joint throughout the course of abduction. The clavicle rotates upward and back ward and the scapula downward and outward during abduction. At

NEUTRAL

the sternoclavicular joint, the clavicle elevates 500, resarbackward 25°, and rotates 50° on its longifudinal axis **ELEVATION**

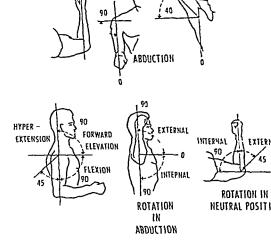


Fig. e 4. Average normal range of motion of the shoulder

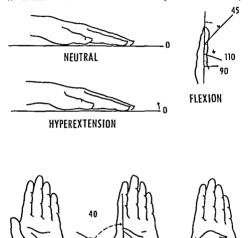
Position and Measurement The patient may stand erect o seated to examine movement of the shoulder joint. For conv ence of the examiner and to evaluate movement in the shoul the forearm is flexed to 90°

Abduction is obtained by raising the arm straight out and from the side and is measured by the angle formed by moven of the arm from the neutral position. The average limit of ab tion is 90°

Lateral elevation is obtained by continuation of the upv movement of the arm above full abduction of 90° to the limit This motion is primarily a result of scapulother motion The average limit of lateral elevation is 40° beyond 90 of abduction

FINGERS

The neutral position for measurement of the finger motion is with the fingers extended (fig 7) Each joint should be measured for flexion and examined for lateral stability Flexion is the only



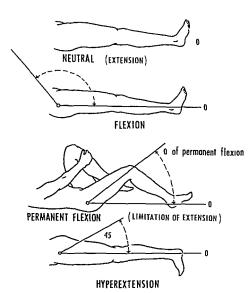
NEUTRAL

ABDUCTION

OPPOSITION

F g re 7 Average ormal ange of mot of the f ge

motion recorded for each joint. The normal limits of motion are for the distal interphalangeal joints 110 for the proximal interphalangeal joints and 90 for the metacarpophalangeal joints If hyperextension exists it should be measured and recorded



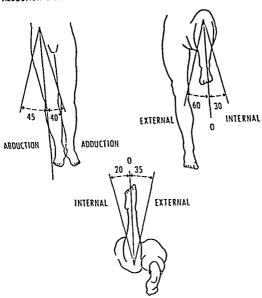
Fgre 8 A erage normal

Abduction is obtained either in the lateral decubitus or supine position. The thigh is moved outward from the neutral position. The angle formed by this movement from the neutral position is measured. The average limit of abduction is 45.

Adduction is obtained by moving the thigh across the midline from the neutral position. The angle so formed by this movement is measured. The average limit of adduction is 40.

Internal rotation in extension can readily be obtained with the patient in the prone position. The knee is flexed to 90 and the leg and foot rotated outward The angle formed by the ABDUCTION & ADDUCTION

ROTATION IN FLEXION



ROTATION IN EXTENSION

ange of motion of the hip

leg moving from the vertical neutral position is measured. The average limit of internal rotation in extension is 20 $^{\circ}$

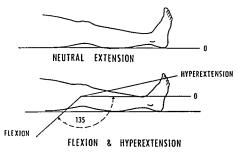
External rotation in extension is obtained in a manner similar to that for internal rotation except the leg and foot are rotated in ward. The angle formed by the leg moving from the neutral position is measured. The average limit of external rotation in extension is 35.

Internal rotation in flexion With the patient supine the hip and knee are each flexed to 90°, the leg and foot are rotated outward. The angle formed by the leg moving from the neutral position is measured. The average limit of internal rotation in flexion is 30°

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External rotation in flexion is obtained in a manner similar to internal rotation except the leg and foot are rotated inward and the angle so formed measured. The average limit of external rotation in flexion is 60

Circumduction of the hip is a succession of the above movements obtained by describing an arc with the thigh through the extremes of the various movements of the hip joint.



Fg 9 Averag ormal ge of motion f th k e

KNEE

The neutral position for the knee joint is with the leg in a straight line with the thigh in the extended position (fig. 9)

Movements From the neutral position movements of the knee are flexion and hyperextension These movements occur at the articulation between the femur and the tibia. In addition to these movements lateral and anteroposterior stability of the knee joint should be tested

Position and Measurement These movements may be measured with the patient sitting on the edge of an examining table or lying supine on the table

Flezion is obtained by bending the leg backward toward the facilitated by flexion of the hip. The angle formed by the leg roving posterior from the neutral position is measured in degrees. The average limit of knee flexion is 135 Hyperextension is obtained by holding the thigh firm on the examining table and lifting the leg antenoriy from the neutral position. The angle formed by movement of the leg from the neutral position is measured and recorded. There is normally no hyperex tension of the knee joint.

Lateral stability is obtained by moving the leg first laterally then medially from the neutral extended position. Any deviation should be recorded as mild moderate, or severe. This is a test for the medial and lateral collateral ligaments of the knee

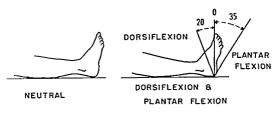


Figure 10 Average normal range of mot on of the ankle

Anteroposterior stability is obtained by flexing the knee to 90° to relax the collateral ligament. The leg is grasped and pulled directly anterior This is a test of the status of the anterior cruciate ligament. The leg is returned to its normal position and the leg then pushed posteriorly to test the stability of the posterior cruciate ligament. Abnormal motion is recorded as mild, moderate, or severe

ANKLE

The neutral position for the ankle is with the lateral border of the foot at 90 with the axis of the leg and in midposition as regards to inversion and eversion (fig. 10)

Movements From the neutral position the movements of the ankle are plantar flexion and dorsiflexion (extension) These movements take place at the articulation between the tibia and talus and should be compared with the knee in the extended position and with the knee flexed at 90° to rule out limitation of motion due to a tight gastrochemius or soleus muscle

Position and Measurement The patient may be sitting or lying supine on the examining table

Plantar flexion is obtained by moving the foot downward from the neutral position. The angle formed by the lateral border of the foot moving from the neutral position is measured in degrees of

plantar flexion The average limit of plantar flexion of the ankle 19 35 SUBTALAR NEILTRAI INVERSION EVERSION ARDIICTION ADDITCTION HYPER -FLEXION EXTENSION

MIDTARSAL

METATARSOPHAL ANGE A L

I gure 11 Ave age ormal a g of m tion of the foot

Dorsiflexion of the ankle is obtained by moving the foot up ward from the neutral position. The angle formed by the lateral border of the foot moving from the neutral position is measured in degrees of dorsiflexion. The average limit of dorsiflexion is 20

FOOT

The neutral position for the foot is with the os calcis in neutral position as regards inversion and eversion and with a line bisecting the heels, extending through the second toe perpendicular to a line representing the posterior surface of the heel (fig. 11)

Movements Movements of the foot are inversion and eversion which occur in the subtalar joint, adduction and abduction which take place in the midtarsal joints, flexion and hyperextension of the metatarsophalangoal joints, which in the great toe is the most important, and interphalangoal joint motions of flexion and hyper extension which are very difficult to measure

Position and Measurement Inversion is the inward deviation of the os calcis which normally is 35° Eversion is the outward deviation of the os calcis and can normally, be carried to 25 Adduction is the inward deviation of the forefoot from the neutral position and normally is about 5° Abduction is the outward deviation of the forefoot which is also about 5° Metatarsophalangeal and interphalangeal joint motion is of little importance except in the great toe where, normally, it is 35° of flexion and 20° of hy perextension Pronation of the foot is a combination of eversion and abduction which may normally be 15° Supination is a combination of inversion and adduction and normally is 20°

GIRTH AND LINEAR MEASUREMENTS OF EXTREMITIES

In addition to measurement of joint motion the length of the extremities should be measured. The length of the upper extremity is measured from the tip of the acromion process to the tip of the radial styloid. The length of the lower extremity is measured from the anterior superior iliac spine to the tip of the medial malleolus on the same side.

Measurements of the circumference of the extremities at prescribed levels should also be performed for completeness of the examination. The arm should be measured three inches above the antecubital fossa, the elbow at the antecubital fossa, the forearm four inches below the antecubital fossa, the thigh six inches above the superior border of the patella, the knee at the populteal fossa, and the calf six inches below the inferior border of the patella.

As a reminder for examiners and for simplification and uniformity in reporting joint motion and measurement of the extremities a form similar to Standard Form 527 is suggested It is recommended that this form be modified to include spaces for recording all movements of all joints, both active and passive, together with the average limit of motion in degrees for these movements A suggested form is shown in table 1

1	Мт	Α.	P	A rag I mu f mo d gr
\	E			0
	R ta			55
	Flex			40
	Нур зо			50
	L ral bend g			40
Sp ne	E te			0
	Fl zı			70
	Нур азю	T		30
	L. I be ding			40
	R tate			35

		Flan						7	0
		Нур вам						3	0
		L 1 be dana	3					4	0
		Rtati						3	5
				Lf		A g lmtf	Rgh		
,	м	Act		P	m d gr A			P	
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TABLE 1 A suggested form for joint measurements-Continued

TABLE 1 A suggested form for form measurements—Continued						
		L	Left		R ght	
Joint	Mton	Active	Pssiv	m tion d grees	Activ	Pass v
Wr st	R di I deviation			15		ļ
(cont d)	Promation at writ		L	75		
	Sup nat on at wrist	<u> </u>		60	<u> </u>	
Fing	E t asion	Ĺ		0		
Index	Distal IP Flex on			45		
	Peman tile ion			0		
	Pro smal IP Fl	<u> </u>	l 	110		
	Perman t fl			0		
	MCP Fl in			90		
_	P ma tfl		<u> </u>	0		<u> </u>
N ddle	DtlIP Flin	<u> </u>		45		
	P ma entile in			0		
	P mal IP Fl		<u> </u>	110		
	P ma t flexion		L	0		
	MCP F1			90		
	P m ent flex			0		
Ring	Distal IP Fl xion			45		
	P man at fl x:oa		<u> </u>	0		
	P x m l [P Fl xion			110		
	Perma t flex	ļ		0		
	MCP Fl x on		<u> </u>	90		
	P ma tile			0		
L ttl	D tal IP Fl to			45		_
	Perman flex o	 		0		
	P xim l IP Fl			110		
	Pm tfl o			0		
	MCP Fl xi			90		
Int m	hala ng eal	Mamoran				

Metacarpophal ageal

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TABLE 1 As gge td f rm f 1 t mea ur m t — C t d

	М	T. t		Ag R		şh
1		Αt	Р	m o d gr	٨	P
F fig L ttl (Co d)	MCP P matfl n			0		
Thumb	I phing l Fl			45		
	Perma fl			. 0		
	M ta po- phal g l Fl			45		
	P ma t					
	Adduct			0		
	Abduc			40		
	Срр			3 hp fthmb tb fmd- dlfn- gf		
Hр	E			0		
	Fi k fi d			120		
	Kn trght		ļ. <u></u>	80		
	P ma fl xı		L	0		
	Нур			45		
	Abd ct		<u> </u>	45		
	Add	<u> </u>		40		
	R ta fi I l			30		
	- te 1		<u> </u>	60		
	R [nal		İ	20		
	Ex nai			35		
k.	F			0		
	Fl 10			135		
	Pm fl			0		
	Hyp		1	0		
Askl	Plata fl			35		
	D fl (xt as)			20		
A tacam phal geal						

TABLE 1 A suggested form for joint measurements-Continued

Jourt	T	L	Left		Right		
	Motion	Activ	Passi e	limit of motion in degree	Act	Pa si e	
Fo t	I ersion	1		35		1	
	Eversi n			25			
	Add cti			5			
	Abduction			5			
	Pronation		Ī	15			
	Sup ati n			20			
т	M tatarso- phalang l Flexion			35			
	Hyp ten-			20			

	Extremity Length	Left	Right
Low atr m ty	At sup p to tip of m dial malleol s		
	Umbilicus t nt nal malleolus		
Upp extr mity	Tp f cr mio to tip of radial styloid		

Circumference

		Left	Right
A m	3 nch bov tecub tal f sa		
Elbow	At tubtalfssa		
F rea m	41 ches belw tec b tal fo a		
₩ t			
Ch t	In pust o		
	Ep ton		
Th gh	6 hes bo up thod of patell		
C If	61 ch blwnf o bord rof patell		
k.	Atpopl t 1 fo		
Ankl			

SUMMARY

The method of recording joint motion described simplifies the procedure by considering only one function of the joint. The extended position is considered the zero and not measured as a

point function and all motion is measured from this neutral point. Failure to extend to this zero or neutral point is recorded as so many degrees of permanent flexion. The confusion of recording several readings is eliminated for example instead of recording the elbow flexes from 180 to 60° and extends from 60 to 180 it is recorded as the elbow flexes 120 no permanent flexion In those patients where limitation of motion may exist a report might read the elbow flexes from 20 to 100 20 of permanent flexion. Further the confusion of ascribing more than 180 to any one motion which is not physiologically possible is eliminated Each functional motion of the joint is recognized and meas

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5 Ca E.F. dRbert S.M.M. hdf m uring d dg; fun n. J Bone & J nt Surg 18 455-465 Ap 1936

NIGHT BLINDNESS

It is important to recognize that night blindness is not a specific symptom of avitaminosis A The occurrence of this symptom should be an indication for a careful dietary history and examination for other factors which contribute to deficiency Remember well that the usual complaint of temporary blindness after passing an oncoming car while driving at night is due a thousand times more often to poor eye habits in driving than to deficiency Show your patient how to watch the right dg of the road not the lights of the oncoming car Don't give him vitam ns Bad dr ving habits will kill him just as quickly whether or not he has a liver full of carotene Remember too that as people get older their eyes tend to be less efficient. Trying to treat the normal decline of age with itamins is interesting expensive useless and done too often. In def ciency night blindne's does not seem to occur until liver stores of the v tam n are exhausted

> -PAUL VILLIAMSON M D Cnad Md IA sat J nal pp 21 22 July 1954

DR JOSEPH WARREN, PHYSICIAN AND PATRIOT

CHARLES H BRADFORD W. D.

T seems unfortunate that Joseph Warren is remembered so vaguely today and that his associates are largely forgotten Those who recall that Warren died heroically at the battle of Bunker Hill will perhaps fail to realize that he oc cupied, at the time, the position of the leading medical practitioner in Boston Even fewer will appreciate the extent of his influence in the political field Second only to Sam Adams he organized, led and controlled the popular movement of resistance to British oppression Together they exercised such diplomacy, courage, and skill that their efforts played a large part in precipitating the American Revolution These three aspects of Warren's life-military medical, and political-are illustrated dramatically by his activities in the last 24 hours before he was killed, as related by his nephew. Dr Edward Warren Though unconfirmed and possibly maccurate, the incidents are characteristic enough to be worth repeating. On the night before the battle it is known that he presided over the Provincial Congress which met in Watertown On the following morning he is said to have attended an expectant mother, labor pains were slow, however and he left the delivery to an assistant, after telling his patient that he must go to Charlestown "to get a shot at the British " Because of this medical call, it is supposed, he was late on the battlefield but not too late to refuse a major generalship and fight as a private in the front line, and not too late to stand fast when defeat overwhelmed his comrades and to meet death with unwavering defiance

Warren began his medical career in 1760, under the tutelage of a prominent Boston physician Dr James Lloyd, who in turn had been trained in London with William Hunter Since no medical school was available in Massachusetts before 1783, the apprentice system took its place during these earlier days In some respects this method of teaching offered advantages that have never since been duplicated Through it, the preceptor, in addition to dispensing his knowledge, could impart a share of

M mbe f Orthop dic Staff B t n C ty H p tal B ston, M s

R p int d with p mus ion from The New England Journal of Medicine v 1 250 pp 383-386 Ma 4 1954 Phot graphs from the ciliction f the Atmed F ces M d call by the Atmed F ce

his wisdom which the pupil might not absorb in any other way For the technical subjects teaching was more than adequate Compounding of drugs for example served as instruction in pharmacology in a way superior to any modern pedagogy Substituting on calls doing dressings and covering minor emergencies gave the apprentice a graded sort of clinical experience that could hardly be surpassed Didactic instruction came when he was accompanying the doctor on visits and discussing cases with him—equivalent to present ward teaching Anatomy was learned by dissection when and where possible Body snatching was the recognized method of obtaining anatomic subjects since no legal method of obtaining bodies had been established

In 1764 Warren aged 23 began practice for himself rapidly advancing to eminence A major reason for success lay in his extraordinarily appealing personality and character. His por trait, by Copley now hanging in the Boston Museum of Find Arts shows a young man of a pleasing appearance fair complex ion and athletic physique. His features tend to corroborate con temporary claims that he was the handsomest man in Boston of that day Unfortunately Copley seldom succeeded in catching an inward glimpse of the spiritual temper of his sitters. Here the somewhat dull expression of the painting fails to suggest the fervor and intensity of Warren's emotions or the lion like cour age that his actions demonstrated.

One of his outstanding characteristics was his rare personal magnetism which drew all men to him He held for instance the intimate and confident friendship of rigid puritanical John Adams and at the same time shrewd hard headed Sam Adams loved him more than any other man Even a man as remote in temperament as Benedict Arnold idolized the person and the memory of the great patriot. Still further evidence of Warren's unique capacity for evoking friendship was demonstrated by the commission he received in 1769 from the Grand Master of Masons in Scotland, appointing him the first Grand Master under the Scottish Charter in America Combined with this personal attractiveness Warren possessed almost limitless energy Up to the last few months he seems never to have forsaken or neglected his professional duties. Only physicians, perhaps, can appreciate how absorbing the responsibilities of practice are let on top of all these Warren heaped an endless load of civic social and patriotic activities that would have overwhelmed an ordinary man Through the stornest trials he carried these tasks with a grace and charm of manner that never betrayed the irrita tions or frustrations of fatigue Two other endowments gave Warren particular force a clarity of intelligence that shone like a light through the perplexing problems of his time and a spiritual intensity that burned like fire in the face of oppressive dangers that most men would have shunned

Having won success in practice, Warren was generous in sharing it with the group of apprentices who soon applied to serve under him They were men, in themselves, whose careers were to prove most interesting One was Dr Samuel Adams son of the great political leader Another was William Eustis, who



Joseph Warren as an off cer in the Revolutions 3 War from an engraving by
Alonzo Chappel from his painting n 1861

served throughout the Revolution as an army surgeon and who eventually took up politics and finally became Governor of the State John Warren 12 years younger than his brother, was from a medical standpoint the most successful of his apprentices He, too served with the army in a number of campaigns, and then returned home in 1777 to direct a military hospital, which was located in a pasture in the West End of Boston, close to the present site of the Massachusetts General Hospital

In addition to these apprentices the contemporary associates of Joseph Warren formed an interesting group Three in particular deserve mention Dr Bulfinch attracts notice only as a father of Charles the great architect who designed the Massa



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A gr ng of J eph Warren by Thom Illma from the fill length port ast
by J h S gl ton Copley Fa we l Hall Boston

chusetts General Hospital and the State House and who completed the design for the Capitol in Washington originally worked out by Hallet Thornton and Latrobe The father was a successful practitioner but something of an individualist. His charge for midwifer, was 42 shillings and he refused to join the Boston Medical Association, which regulated the fees of its members,

because this organization set the charge evorbitantly at 48 shillings Far more important in Joseph Warren's life was John Jeffries, a Boston man of about his own age, who had carried out his medical studies in London and then returned to practice in Boston Because of his British affiliations Jeffries remained a Tory, but this apparently did not disturb his personal relations with Warren At Bunker Hill Jeffries accompanied British officers immediately after the battle, and it was he who positively identified Warren's body before its hurried burial Instant death had been caused by a bullet that shattered the skull After the British evacuation of Boston, almost a year later, when the patriots' bodies were disinterred for reburial, another positive identification was required It was carried out by Paul Revere, who was able to recognize his own handiwork in a tooth he had made for Warren

An appraisal of Joseph Warren's political activities would require far more space than is permitted here. In general, his ef forts may be divided into three major phases as propagandist, as legislative-executive, and as a man of action. In the first respect, he was tireless Year in and year out, for a decade his writings held the Tory leaders continuously on the defensive, and at the same time they cultivated and built up a spirit of patriotic enthusiasm among his compatriots As early as 1768 Warren wrote such a convincing denunciation of Tory blunders and abuses that the Royal Governor, Bernard, in a fit of indigna tion dissolved the patriot legislature because it had failed to suppress papers of this sort. At the height of the crisis 1774. Warren composed the masterly Suffolk Resolves These were transmitted to Philadelphia for consideration by the first Continental Congress The straightforward hard-hitting language astonished that assembly "It is tantamount to a declara tion of war " one of the more timid members objected But its sentiments were expressed with such simple eloquence that they suggest the grand diction of the Declaration of Independence which followed a year later A brief sample deserves quotation.

To us our venerable progenitors bequeathed the deabought inheritance of liberty to our care and protection, they consigned it and the most sacred obligations are upon us to transmit the glorious purchase unfettered by power unclogged with shackles to our innocent and beloved off spring. In a cause so solemn our conduct shall be such as to merit the approbation of the wise and the admiration of the brave and free of every age and of every country.

Most impressive of all Warren's appeals was his oration in the Old South Church a month before the battle of Lexington and Concord As one passes that building today, one can see the great window behind the pulpit where he made his entry Be-

cause the hall below was too tightly jammed by the throngs of people to allow him passage he came by ladder through the window Three hundred British officers in their scarlet coats had gathered at the front of the hall to overawe and intimidate the speaker In fact it was stated on the authority of Hutchin son that some of this group seriously considered assassinating Warren Rumors also circulated that all the patriot leaders appearing here would be arrested and shipped to England for trial as traitors This was, as a matter of fact the intent of the British Ministry but General Gage hesitated to carry it out knowing the violence of public reaction that could be expected It was here on a similar occasion two years before that Warren had coolly dropped a white handkerchief on the pistol of one officer who pointed it up at him Again thoroughly undaunted Warren exhorted the Parliamentary leaders to desist and warned Sritain of the danger that would follow any further aggressions against the colonies Unfortunately his well reasoned arguments like the great rhetoric of Edmund Burke failed to penetrate the stoled stupidity of England s ruling class

As a legislative-executive Warren's achievements have passed more or less unnoticed although they equal his other feats and in some respects exceed them. It must be remembered that after the battle of Lexington and Concord there was as vet no Declaration of Independence and therefore the Royal Gover nor still retained his full executive powers. In the absence of any other legally constituted authority government might easily have degenerated into mob rule. This was just what the Tories had predicted would follow in the wake of the revolutionary movement. The patriots avoided such a disaster by electing their own congress " of which Warren was president and by delegating its assumed powers to a committee of public safety of which Warren was chairman Thus during the two months between Lex ington and Bunker Hill nearly everything that had to be done required Warren's initiative Warren's judgment and Warren's decision. In this interval an army of 8 000 undisciplined country men had assembled on the outskirts of Boston They must be fed sheltered drilled and furnished with arms Ammunition must be supplied Tactical plans must be considered and approved In addition the problems of the civilian population must be regulated a large number of refugees from Boston must be housed and cared for the support of communities ruined by op pressive British legislation must be provided and order must be maintained Public relations especially with the other colonies were of great importance and must be handled with ex treme delicacy and tact. It is no exaggeration to say that all these problems came to Warren's hands and with magnificent capability he met and overcame them one by one In two short months the rustic farmers and tradesmen were molded into elements of an army, rudely equipped an sent to the great encounter at Bunke !

Above all else Warren preferred he to ew states that he devoted part of evecises He had often declared his villa cause he held sacred This seemed error of his speeches he had asked characa is the prize, who would shun the mit - + waste one coward thought on life?" ! . . not grow unnaturally in Warren's () if had heard his father remark, 'I wo than that he should be a coward " " (() captured in the Deerfield Indian na :, the way to Canada before his rescur ... no pacifist tradition or timid complet then, that when the first shots were fire Warren, who had the night before die, , William Dawes with messages of derice to engage in the combat. He was 19 11/ who came from Roybury, and lold, a With characteristic diadain for (P self to the British fire so reckless! / t. away a lock of hair that he wore in & ear This close escape failed to teec reported that he engaged in every mir, up to the Battle of Bunker Hill

From such venturous exploits, orr thoughtless firebrand who placed a 1, life but this was far from true His i literary skill, and his scientific the idea By nature he was deeply tributed to him an unsurpassed kr social position brought him fric family affairs were more than co early and was the father of for interrupted this domestic joy vi but subsequently he k Scollay and was thought to be death Thus having already y/ was faced with no obstacle the everything a man might design croft remarked "the future g Why then did he needlessly, protests of his friends, thro battle? The question can brin

One possibility is that i ment of combat, as one of i

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in which may be not care for the physician may be awaiting his the most for the crefore depends at This procedities present, is n in of evacuation the patients require esuscitation before treatment because

ie.

the case Perhaps as often happens the battle tensions that grip men under fire superseded his instincts of self preservation. He himself had once expressed something of this inward fury

They say we will not fight be remarked and added Would to Heaven I might die knee deep in their blood! Or possibly, with his keen political intuition and passionate devotion Warren foresaw that the inspiring example of his courageous death would toresaw that the hispiring example of his coulageon death would contribute more to the young and untested revolutionary cause than anything he could give it in life Very probably it occurred to him that the banners of insurrection must be deeply colored in the red dve of mortal sacrifice before they could lead the crusade for human liberty to a triumphant end

PREVALENCE OF DIABETES

The number of diabetics in this country has been estimated to be about 2 000 000 Approximately 1 000 000 of this number are aware of their condition leaving another 1 000 000 unknown diabetics Estimate has also been made that around 4 500 000 of the present population of the United States eventually will become diabetic Results of this survey and a survey done at the Un versity of So thern California seem to indicate that there are approximately six or seven diabet es in each 1 000 college students who are the usual age of freshmen and new students

Unless diabetes mellitus is found and treated in its early stages such complicat ons may occur as retinitis arteriosclerosis with re sulting coronary thrombosis and gangrene come malnutrition cataract and diabetic neuropathy. The asymptomatic normal appearing diabetic person is not free from the progressive degenerative pathologic changes which bring about these many complications. For the sake of the pa tient diabetes must be controlled either by insulin strict diet or by both insulin and diet

-TILLIAM E TAYLOR M. D et 1 I urnal L p 247 July 1954

GENERAL PRINCIPLES OF MILITARY SURGERY

WARNER E BOWERS Colonel MC. USA

THE CONCEPT that military surgor, is identical with civilian care of trauma has been fostored, and while in general there is a similarity, certain very distant differences exist. If one were required to epitomize military surgery in one sentence, it might be stated as follows. Do the most good for the greatest number at the right time and in the proper place. If all of the ramifications and connotations of this statement were well under stood no further discussion of the subject would be required

Good military surgery is not a makeshift or make-do but embraces good clinical judgment and advanced technical skill with the modifications required by the time and space factors which are interjected by the military situation. All casualties must be treated correctly and with good judgment, even under the most adverse physical conditions such as mountainous terrain, absence of roads one-way bridges, mud, or desert. Naturally, military necessity is of prime importance and winning of the war is a para mount requisite Ideal surgical management must conform to this necessity even though it may mean interference with wound healing. In rare instances, it may mean that the wounded must be abandoned on the battlefield. These are stem neces sites which must be faced distasteful as they may be

An essential dictum of military surgery and one which may be difficult for civilian physicians to grasp is Do not care for the one at the expense of the many! While a civilian physician may spend all night with one seriously ill patient, the military surgeon must consider the fact that 50 casualties may be awaiting his care and he must budget his time so as to do the most for the greatest number. Success of military surgery, therefore, depends in large part on proper triage or sorting of patients. This procedure, accomplished by the most experienced surgeon present is repeated at each medical installation in the chain of evacuation in order to make three decisions. First, which patients require immediate care, which require a period of resuscitation before definitive care, and which have no priority for treatment because

of the essentially fatal nature of their wounds second which patients can be returned to duty locally keeping in mind that the mission of the Medical Service is to conserve the fighting strength turid which patients require evacuation further to the rear for more skilled or more extensive care

MEDICAL ECHELONS

Because casualties are evacuated through a chain of medical installations it is obvious that some division of labor is necessan and some policy must be set up stating what functions each echelon will perform. This echeloning of medical care has at least three main objectives in correlation with proper triage First echeloning assures early care for the most senous cases those classed as nontransportable being treated within the division area. Second it assures the maintenance of sufficient empty beds in each installation to take care of tomorrow s fresh casualties This means that after properly performing its allotted function each installation disposes of the patients as rapidly as possible Third it prevents evacuation of lesser injuries by stopping the rearward movement of casualties who require no further care and who may therefore be capable of going to duty locally within the pre cribed evacuation period. This helps to conserve fighting strength keeping in mind that soldiers evacuated beyond the divi sion area have a decreasing prospect of returning to duty with their outlits

THE SURGICAL TEAM

The military surgical team is a large one embracing all eche lons from the aid man on the field to the urgeon in the general hospital Members of this far flung team care for the same nationts uccessively in point of time and space. The military surgeon depends on the next forward unit for proper initial care and evacu ation and on the next rear unit for proper further care and disposition The military surgeon of neces its therefore cannot follow his patient to completion but rather he performs his allotted function and passes the responsibility for further care to his confrere in the rear Were it not for the fact that military surgeons are human such a system would be ideal because here there is no need to struggle to get patients there is no competition except for the best possible results and each man can be proud of the work done by other members of the team to the front and to the rear This teamwork allows the utilization of surgeons with incomplete training because only the skill and technical knowledge required at his echelon of as ignment is needed and this can be mastered quickly by a partially trained man Fortunately it is not necessary for each military surgeon to be skilled in all procedures from resuscitation to reconstructive plastic and orthopedic operations. In such a system over all guidance is given by traveling

consultants who promulgate policies of treatment and bring followup information. Only in this way can the young surgeon learn what has happened to the patients whom he has treated and evacuated By this means he gains confidence in himself or is afforded the opportunity to profit by his mistakes before too many casualties have passed through his hands.

DIRECTIVES

From the foregoing, it is apparent that directives must be issued, stating what procedures will be accomplished at vanous echelons and occasionally directives must be issued stating what technical procedures are acceptable Civilian doctors must learn the necessity for this and must realize that such directives are not pure whimsey Procedures such as primarily closed-flap ampu tation stumps, although suitable for university hospital work, have no place in battle casualty work and similarly, loop colostomies with incomplete division may be sufficiently diverting for temporary civilian use but may be entirely unsatisfactory for a long evacuation to a general hospital thousands of miles away Decause doctors are individualists and resent being told how to treat their patients such technical directives are kept to a mini mum consistent with good results. The eager young surgeon who does too much at his echelon may make patients nontransportable the should be evacuated and, by doing too much or too compli cated procedures he may deny time to other patients who need his care Furthermore he sloves the chain of evacuation and keeps too many beds full in his installation so that there may be insuffi cient empty beds for the next day s casualties Such a situation may be extremely serious from the military standpoint

TRANSPORTATION

All possible modes of transportation are used in the evacuation of patients Walking wounded tend to follow natural lines of drift. assisting each other or even using the pickaback method Litter carry is extensively used in forward areas but may be very wasteful of perconnel-as in Korea where four or eight bearers sometimes were needed for each litter because of the difficult terrain long haul, and human fatigue factors Small boats and local carts augment jeeps and tanks as makeshift ambulances. Even the light liaison planes are used on occasion. The helicopter has become an integral part of planning for evacuation and the story of its use in korea is now well known Field ambulances and railroad trains still play their customary role even though airplanes have become commonplace Ships still play a minor role in Army circles where they function largely as sea ambulances in contrast to Navy usage where they function as general hospitals. The ready availability of empty aimplanes is not always helpful for several reasons First such ready availability may cause patients to be evacuated

too soon Second because there is a tendency to hold those who are seriously wounded for further observation it may cause evacuation of the less severely wounded who might have been able to return to duty locally Next it may be that patients will be started on a long trip which will keep them in transit at a time when some definitive procedure such as wound closure should be carried out thus delaying convalescence Finally it must be remembered that most available planes are cargo carriers going back to their base of origin and are not under medical control Therefore patients evacuated may end up in an area far removed from a special treatment center

MEDICAL INSTALLATIONS

A brief recapitulation of the functions of various medical in stallations seems indicated at this point. The battalion aid station is concerned with first aid and resuscitation including maintenance of airway control of hemorrhage application of splints and dressings administration of narcotic for pain relief the tetanus immunity booster dose and initiation of chemotherapy infusion of blood plasma or volume expander and initiation and transmission of proper records The collecting station serves as an ambulance relay post and the clearing station is responsible for proper sorting of patients and treatment of minor injuries. Definitive care is given in the mobile army surgical hospital (MASH) to nontransportable wounded in the division area including unconscious patients and those with extensive burns some major amputations thoracicoabdominal and craniocerebral injuries wounds of the genitourinary tract and the spine injuries to major blood vessels and permeal rectal area and penetrating wounds of the abdomen After definitive care these patients together with patients with lesser injuries who have bypassed the MASH are sent to the evacuation hospital which in some instances may function as a MASH additions usually less mobile General hospitals serve to give rehabilitative and reconstructive care in general, it should be realized that the closer the hospital to the fighting lines the high er the case fatality rate because more fatally wounded will live to reach it. The maximum forward location is where the treatest number of casualties can be saved with the least danger from enemy action. Any casualty dving after reaching the first medical installation (Bn Aid Sta) is said to have died of wounds (DOW) as compared to those who die before that time who are referred to as killed in action (KIA) Consequently within reason the higher the DOW rate the lover the KIA rate

Skilled professional personnel in scarce categories are con served by the use of specialty teams and the establishment of specialty centers While this system is subject to abuse it is easier to assemble patients with similar injuries for physicians in scarce categories in a few places rather than to try to teach large numbers of surgeons the special stalls needed in their care. A prime example is the field of neurosurgery

SUMMARY

All efforts are aimed at conservation of the fighting strength by doing the most good for the greatest number at the right time and in the proper place. Each military surgeon must be trained to know his proper niche and to perform his allotted function there to the very best of his ability, trusting in his fellow members of the team to front and rear to do the same. This applies to all, from the solcier in the front line who helps bandage his wounded buddy to the Surgeon General who has over all responsibility for the super viscon of the entre medical service.

THE CONSULTATION AND PROFESSIONAL ETIQUETTE

Time was when a consultation was just that—in the Websterian sense a deliberation of two or more persons. An hour was agreed upon at which the physicians would meet and in no instance would the consultant see the patient before the arrival of the attending physician if the latter were not at the scene first. Somewhere this genteel deportment has been lost in the hurly burly of modern living along with many of the gracious customs of the leisurely times which preceded our own. And not may it be said necessarily to the benefit of the patient or the doctor.

Not two days ago a conferer related the story of a patient who had seen two consultants. Each plus the attending physician had prescribed thyroid without knowledge of the other prescriptions.

Indefensible? Perhaps but it points up a reasonable desideratum the need of specific instructions in the referring of patients Is this patient referred for examination and recommendation or for examination and continued care? The specific intent of the referring physician is often unclear to the consultant. He would much prefer that it be sharply defined.

An adaptation of the amenities of an earlier day will recapture the dignity which was lost when doctors began to request their consultations as they passed in the hall. Say Jim see Mrs. Jones in 421 will you? And leave a note on the chart.

--LOUIS J BAILEY M D in Det oit Med cal N ws P 6 Oct 18 1954

stresses of the winter months Peace talks began in July and the falling off of the casualty rate is presumably due to this, though there was still considerable patrol activity and from September there was a definite increase in mortar and shell fire

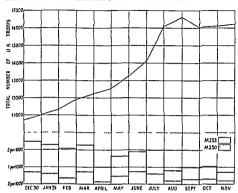


Figure 1 (A) Graph showing p yehlat ic casualities per 1 (000 soldie s ach mo th. The sup level f ach blo k initicates the t 1 psy hiat ic lo The shaded a ca pr sents those oldie s evacuat d fom the theat (M250) (B) Above this appea a gr ph repres ti g the total n mber of U k personnel i the theat my the ymonth.

During the year December 1950 to November 1951 there was considerable movement of troops in and out of the tbeater and therefore the total monthly figures of troops reckoned as being in the theater must be taken as being below the total number who could have been potential casualties. For example the 28th Brigade was replaced in April by battalions from Hong Kong and the 29th Brigade was being replaced during the October November period.

It is obvious from these figures that the loss of manpower due to psychiatric breakdown was negligible and presented no major problems to the administrative authorities. The writer has not at hand for comparison the exact monthly casualty and sick rate resultant from surgical and medical breakdown but through observations and experience in the routine duties of orderly medical officer admitting convoys of patients directly from the battle

front, the proportion was roughly one psychiatric casualty for every 20 wounded or sick

Some 275 cases from the Australian, Canadian, New Zealand, Indian, and South African members of the Commonwealth forces were interviewed. The personnel from these countries were all most entirely volunteers and together with some first-class material a considerable number of inadequate psychopaths and bysterics were included, whose tolerance for combat, hard ship, and boredom was low. It was clear that their retention in the force would be detrimental to the morale of their particular group Many had a provious (but undisclosed on enlistment) psychiatric history, a few members were even in receipt of pension for their "disability." The following is an analysis of all non U. K. members of the Commonwealth force who were interviewed.

TABLE 3

RTU	M2S3	M2S0	Total
138 (50 percent)	33 (12 percent)	104 (38 percent)	275
	33 (== personn)	,	

The combined number of non U k troops in the Commonwealth units is not accurately available, but it would be fair to estimate it at about one-quarter to one-third of the total force. The per centage psychiatric breakdown was therefore considerably less in U K elements. This point is brought out not as a claim for superiority of any one member but to illustrate the very real importance and economy of psychiatric screening and personnel selection.

TREATMENT

Apart from continuous narcosis and abreactive therapy no other physical methods of treatment were used The technic and man agement of these are well known and will not be given here Abreactions were largely confined to patients presenting hysterical symptoms, and showed some quite dramatic "cures" which in variably enhanced the reputation of the operative psychiatrist. Reassurance, suggestion and an appeal to the soldiers sense of duty both to himself and, often more effective, to his unit are simple methods of psychotherapy which, despite an understandable scepticism because they are "simple" methods, give better results than might be expected Psychotherapy at a "deeper level" was reserved for severe neurotics who, if recommended for evacuration to England, were confronted with a few weeks delay An alleviation of symptoms to some extent was usual, and any relevant psychopathology was forwarded with the patient's documents for the attention of the military psychiatrist at Nelley

were in good repair with a partial bridge. The chest was sym metrical with good and equal expansion bilaterally and no splinting The lungs were clear to palpation and auscultation. Ex amination of the heart revealed no abnormality No masses or tenderness were felt in the abdomen Examination of the genitalia revealed a soft, cordlike mass in the left scrotum. The left testicle was thought to be slightly enlarged there was no tender ness Rectal examination was negative

Laboratory Findings After admission to the hospital tuberculin skin tests PPD—first and second strength histoplasmin and coccidentian skin tests were all negative Three sputum studies for tumor cells were reported as negative Unnalvsis revealed a specific gravity of 1015 negative for albumin and sugar and a rare white blood cell per high power field

The blood cell count revealed 8 000 leukocytes per cu mm with 64 percent neutrophils 33 percent lymphocytes, and three percent monocytes The erythrocyte count was 4 890 000 per cu hemoglobin 14 0 grams per 100 cc sedimentation rate 8 mm in the first hour The hematocrit was 44 percent, Serum total protein was 6 50 grams per 100 cc albumin 4 48 and globulin 2 02 grams per 100 cc A flocculation test for syphilis was nega tive A bromsulphalein test revealed no dve retention Serum bilirubin was reported as 0 0 mg per 100 cc in one minute 0 2 mg per 100 cc total Circulation time with ether was 0 6 second

A posteroanterior roentgenogram of the chest revealed a mass in the left hilar region. The patient had a bronchoscopic examina tion at which time the endoscopist reported the carina to be pul sating more than usual however it was in the midline He also reported an extrusic mass partially occluding the onfice of the left main bronchus. There was no evidence of an endobronchial lesion No specimen for biopsy was taken The left main bronchus was patent and normal below the area of this extrinsic mass

Fluoroscopic examination by both the chief of radiology and the civilian consultant revealed the left hilar mass to transmit pul sation An expansile type of mass could not definitely be ruled out, therefore an angiocardiogram was performed using a 70 per cent solution of sodium acetrizoate (urokon) and making films at four eight and 12 seconds The radiologic report was the lesion in the left hilus is unrelated to the vascular system per se except that it may be directly contiguous with it.

Urologic consultation was obtained concerning the left testicu lar abnormality it was the opinion of the urologist that the testicle did not contain a tumor but that the abnormality was due to an enlarged and inflamed epididymis

The patient was seen in consultation by the thoracic surgeon and the civilian consultant in thoracic surgery On 17 December 1953 a thoracotomy was performed on the left side

DISCUSSION

Doctor Board We shall go through the summary of what I think are the important points noted in the protocol that we can use to attempt to arrive at a diagnosis. This is a 39-year-old white man who developed a vague feeling of pressure over the left anterior part of the chest I presume that the onset was not sudden and the pain was not severe because we do not have a definite date of onset Associated with this vague feeling of pressure in the left anterior chest was a soreness on motion in the left shoulder. There were no associated pulmonary symptoms and particularly no cough dyspnea hemoptysis or fever This was a relatively asymptomatic lesion. A toentgenogram of the chest at that time showed an abnormality in the left hilar region In the past history there are three points that may have some bearing upon the differential diagnosis. The patient was stationed in Japan where tuberculosis is quite common. He also has been stationed in Oklahoma and central and south Texas and Nebraska Oklahoma and Texas have endemic areas of coccidioidomycosis Nebraska Oklahoma and also to some extent Texas are more or less endemic areas for histoplas mosis which might come up in the differential diagnosis. The remainder of the past history apparently has little connection with the present illness There was a bilateral vasectomy in 1948 which may have some bearing upon the testicular findings as we will note later

In the physical examination most of the findings are significant because of their absence. There was no weight loss and no cervical lymphadenopathy. The question of 1id lag will have to remain questionable as to significance even if present. The lungs were clear. There was a soft cordlike mass in the left scrotum and the left testicle was thought to be enlarged. This would make us consider metastasis from a testicular tumor as a possible explanation for the hilar abnormality.

The laboratory findings again are significant only because they are practically all normal All skin tests—histoplasmin, tuberculin and coccidionlin—were negative Routine laboratory findings were within normal limits. There was no anemia and no leukocytosis. The sed imentation rate was normal. The serum protein level and albumin-globulin ratio were normal. I presume the latter was obtained because they were thinking of the possibility of sarcoidosis which will give an elevated globulin in 60 to 70 percent of patients. Serum globulin was normal. We come down to the roentgenogram of the chest which is really the main significant finding all the way along in the illness at least as far as is noted in this protocol. The description of the hilar mass is not adequate. We should like to know whether it is infiltrating

our from the hilar region or whether it had sharp borders or just what it is I will ask to see the roentgenograms

Kohl At the time this patient complained of symptoms there was a sharply defined lesion directly related to the left hilar area (fig 1) We were fortunate in having two previous films made in February and June 1953 which had been interpreted as normal and even looking back to that time there was no indication of anything wrong in



F gur 1 P st oa terior oentg gram of che t tak 6 November 1953. The I sw produci g a promune c th left bila regio can be read ly

the hilar area at that early date (The onset of symptoms was in mid October 1953) The films we have taken in November and December all show essentially the same picture Films made on inspiration and expiration show the mass to be the same size which would indicate that it is solid rather than vascular A lateral film showed it to be located in the hilar area. There was no other abnormality in the lung field There does not appear to be infiltration or extension outward There is no shift of the mediastinum. We can see the trachea and main broncht in some of the films and they are not encroached upon in any manner

Doctor Board Can you say whether this is a lymph node in the left hilus or a lesson in the parenchyma of the lung?

Doctor Kohl I don't think you can say whether it is a lymph node or another mass We do have a few other films An angiocardiogram done on 15 December (fig. 2) and roentgenograms made with the Bucky diaphragm show the trachea and bronchial tree quite well There is no



Figure 2. Angiocard ogram showing good fill ng of the superior vena cava right auricle and ventricle and pulmonary artery and its branches This administrates that the hilar mass was not an anewysm of the pulmonary artery and that the mass lesson was separate from and did not interfere with the viscular channels.

encroachment that can be seen. Sodium acetrizoate was injected and we see the superior vena cava right auricle and the right ventricle outlined. There is some dye in the pulmonary artery. The mass does not seem to be obstructing the pulmonary artery. It does not appear to be a vascular mass because there is no aneurysm sac filled. There is no compression of any branches of the pulmonary artery.

Does 8 od Thank you. The only other additional thing in the protocol tha would help us is th description of the bronchoscopic examination. The carina was reported to be pulsating note than usual. However it was in the milline Also no ed was an extrinsic mass par railly occluding, the ordine of the left rain bonchus. There was no evidence of any endobronchus lesson. No specimen for biopsy was taken. The left rain bonch hus was paten and notical below the area of this extrinsic mass. The urologic consultant thought the testicular abnormality was due to an enlarged and inflanced epididynis which would certa lybe compatible with the description by rein the protocol.

So we have a young min 39 years of age with a relatively asymptomati. I sion in the left ch at associated only with pressure symptoms and with some antiralgia in the left shoulder without any significant physical findings as far as the pulmonary system is concerned, and with normal laboratory findings with the exception of the rorn grobars. In the differential diagnosis, then we would have to consider sever I things because we have no group of findings that would lead us to make a definite diagnosis. In this case it is easy to make a therapeutic diagnosis. By that I mean the decision of what to do is easy Because we can't make a definite diagnosis excluding neoplasm in this area a thoracotory certainly is justified and indicated. The exact diagnosis of cours would be dependent on what was found at the according

"e can my to amuse ourselves by seeing how close we can get to the diagnosis by putting together a few of these findings. One thing we hare to consider in a mass in this area would be a cardiovascular lesion, Aori an mysm enlarger left atrium, and anemysm of the pulmonary arrery can all cause pressure on the left main stem bronchus The can be excluded almost with certainty on the bronchoscopic findings becaus it is almost impossible for a vascular lesion, per se to commess and partially occlude a bronchus without causing displicement Of cours the angiocardiogram further helps to eliminate any vascular lesion. Teraloid tumors thymic tumors and intrathor cic got ers usually occur in the affection mediastinum so we can dispense with those I is true that intratho acic goiters can be located anywhere in the mediastinum bix it is extremely rate in the hilar regions Newtogent tumors usually occur in the posterior mediastimum. Lipomas do occur in the hila, alea or the medias inal alea but are extremely rate. They transmit pulsations well when plesen, and can become very large without producing symptoms. Lipomas usually have a different amearance on to-nig-nogi as from this tumo giving a light peripheral zone in the form of a halo with a dense opaque center. So liporta can mo e or less be ruled out. Bronchog nic cysts usually are found pene th the carins and attache to the traches o main bronchus where they or genate. These symptoms consist chiefly of pain and pressure phenon na They may nove vertically on swallowing and that was not noted in this pati it o.. fluoroscopy It would be unusual to have a

bronchogenic cyst obstruct the orifice of the left main bronchus because of extrinsic pressure. Pericardial cysts in this location also are quite rare.

One unusual phenomenon noted in lymphomatoid disease that is occasionally of diagnostic significance is that in spite of considerable enlargement of the mediastinal glands there is seldom any intra thoracic displacement. In this case all mediastinal organs, the trachea heart carina bronchi et cetera are in normal position. This would make us consider that this hilar mass is most likely an enlarged node or nodes For practical purposes the diseases which must be considered in the differential diagnosis in generalized or localized mediastinal lymphadenopathy are Tuberculosis coccidioidomycosis lymphoblas tomas metastatic neoplasms and sarcoidosis We also have to consider bronchogenic carcinoma with metastasis to the lymph nodes That is a very good possibility in this case. We can't from the information in the protocol definitely rule out any one of those and particularly not bronchogenic carcinoma or lymphoblastoma so that as I mentioned be fore the therapeutic decision for thoracotomy is certainly justified at this point If it were a malignancy I would doubt that it was a resec table one because of the close proximity of the tumor to the carina On the other hand the information to be gained from a definite diagnosis would certainly be helpful in directing further therapy

Now concerning tuberculosis tuberculous lymphadenopathy or tuberculoma. Against the diagnosis is the fact that the skin tests are negative. That does not rule it out because I am sure many of you have had the experience of seeing a patient in whom a tuberculoma was found at operation yet who had a negative tuberculin skin test. But the fact that the skin tests were negative would be statistically against this as a tuberculous lesion. Against the possibility of tuberculoma would be the lack of general symptoms and the normal sedimentation rate. Of course none of these definitely rule out a focal tuberculous lesion.

Coccidioidomycosis usually is located in the peripheral part of the lung but may occur in any part and occasionally is accompanied by hilar enlargement Sixty percent or more of the patients will be asymptomatic Against coccidioidomycosis in this patient is the normal sed imentation rate and the negative skin test however the negative skin test as we mentioned before does not rule it out. In a study of a series of 30 patients in whom focal pulmonary coccidioidal lesions were removed surgically skin tests were positive in only 67 percent of all patients in 73 percent of patients with cavitary lesions and in 56 percent of patients with solid lesions. So that leaves a fairly large percentage with negative skin tests. We cannot definitely rule out coccidiodomycosis although the hilar location is against this being the diagnosis.

Histoplasmosis will occasionally produce a focal solid pulmonary lesion and this patient did live in the southern area but the negative

skm test and lack of definite evidence of a patenchymal lesion would make this disease very unlikely

Satcoidosis is another condition we certainly have to consider be cause it can cause large pulmonary masses both in the hilus and in the parenchyma of the lungs and be relatively asymptomatic. It may produce only hilar node enlargement. It is a little unusual for sai coidosis to present only mediastinal node enlargement and only in one hilus but it can produce that picture. In one series seven our of 52 patients with satcoidosis had only mediastinal adenopathy? Sarcoidosis interferes in some way with the delayed type of skin reaction so that a negative tuberculin skin test is the rule rather than the exception in this disease. Sarcoidosis cannot be ruled out.

One symptom to me is extremely interesting in relation to pulmonary disease and if we want to make a little differential diagnosis based upon that at least it might be entertaining if not correct Arthralgia and osteoarthropathy with or without clubbing of the fingers associated with pulmonary disease are very interesting phenomena unexplained it is true but there are certain interesting differential points that may be helpful For instance in one series of 1024 patients in whom pul monary resect on was performed a study was made of the incidence of arthralgia with and without objective manifestations of clubbing of the fingers or osteoarthropathy 1 In this fairly large series not one patient who had suppurative disease or tuberculosis had arthralgia not associated with clubbing of the fingers of a definite finding of osteoarthropathy So it appeared that the finding of arthralge alone in this fairly large series was definitely in favor of a neoplastic lesion either pleural mesothelioma or some other malignant pulmonary lesion. So we get down to the consideration of neoplasms that could be in this area

In the lymphoma group we cannot differentiate clinically between Hodgkin's disease and lymphosarcoma. In tumors of the lymphoma group there is often interference in some way with antibody reactions so that it is not unusual to get a negative delayed type of skin test. Lymphoma may be the di gnosis in this case. It cannot be excluded on the infor mation we have in the protocol Secondary metastases to the hilus from any primary focus temains a possibility but in the information here I have no indicat on for any primary neoplastic lesion. The irologic consultant was not impressed by the testicular findings and those were the only ones which would lead us to suspect a primary lesion elsewhere Furthermore a patient five feet nine inches tall and weighing 166 pounds certainly had no weight loss. If he had a primary malignant lesion with distant metastasis we would expect more symptoms Bronchogenic carcinoma s a good poss bility A malignant lesion in this area could extend to the nodes about the hilus and can give obstruction to the bronchi I would if I had to make a guess in this case guess that this is a meoplastic lesion either a primary neoplasm of the lung or one of the lymphoma group I don t think we can defin tely rule out any of the disea es mentioned in the chronic granuloma group

Doctor Jensen. Is there any discussion from members of the audience?

Doeter Koh! I would like to ask Dr Beard what percentage of the Boeck's sarcoid he mentioned had only hilar adenopathy?

Poeter Beard I didn't say any percentage. In that series seven our of 52 patients had involvement in mediastinal nodes only. I don't remember that it was broken down as to the number having involvement in unilateral mediastinal areas.

Doeto Kohl In my experience most cases show hilar adenopathy alone and I think to have parenchymal infiltration is rather unusual. We went through a 10-year series of all patients with Boeck's sarcoid observed at a large institution and the incidence of pulmonary parenchymal infiltration was low. Nost cases were limited to the hilar modes mostly bilateral but not all I was surprised that the incidence of hilar adenopathy was so low in that series.

Doctor Board That would agree with my experience in the few patients I have seen. I think that they meant this was the only finding of sar coidosis. Most often there are other findings of peripheral nodes, skin lesions splenomegally hepatomegally or ocular lesions. In seven of 52 patients the only finding was mediastinal lymphadenopathy. I think the incidence of mediastinal lymphadenopathy without other radiologic findings say of a parenchymal lesion of the lung is certainly higher than seven out of 52.

Doctor Kent* You didn't explain in too great detail how you account for the shoulder pain. I don't know whether that is a red herring or not

Doeto B od I do not know whether it is a red herring or not We do not have any report of examinations of his left shoulder so we do not know that the arthralgia was not due to some local disorder in the shoulder. The relationship of arthropathy to pulmonary disease is certainly an interesting one. There are many reported cases in which arthropathy was a major finding in patients with pulmonary tumors and in whom the joint manifestations cleared completely following pulmonary resection. In several of these recurrence of the malignancy was as sociated with recurrence of the arthropathy I do not know of any adequate explanation for this association. The arthropathy is certainly not just on an anoxemic basis. Some authors have attempted to relate the arthropathy in some way to pleural involvement because the highest incidence of arthropathy of the most severe degree is associated with those pulmonary lesions involving the pleura such as a mesochelioma.

Do t . J en Any other questions or comments?

Doctor U cm. * Here is a 39 year-old man who had a bilateral vasectomy in 1948 and five years or so later is described as having a slightly

Capt. Herb rt K t, USAF (MC) Chi f f Phys c 1 Medic n Service. Capt. H bers Uram USAF (MC) Surgical S rv c

enlarged left testicle and a cordlike mass in the left scroturi. This coupled with the fact that he has vague abdominal complaints and a mediastinal mass makes me think of serunoma with mediastinal presatats;

D to B and The findings in the testicle together with the pulmonary lesion might also suggest tuberculosis because tuberculous epididy mitts is not too uncommon a finding I certainly agree that seminoma is a possibility

Det J re I believe it would be pretty difficult to have a real epidalymitis with the vas ligated and divided because that is a treat ment for chronic epidalymitis which usually cures the disease if it is of the suppurative infectious type at any rate

Doet Moltry He could have had a vasitis following vasectomy and this might have been a residual finding there

Doet Jen - Any other discussion or comments? If not I believe we are ready for Dr. Fair who operated on the patient

Do to F in I think there are several pertinent points I want to bring in that have not been discussed fully enough I don't mean to repeat what already has been given We get to thinking sometimes of car cinoma of the lung in terms of the cl ssical textbook description when really there is no such thing. There are no absolutely pathognomonic clinical signs not are there radiologic findings from which one can say this is cancer of the lung. One symptom of cancer of the lung that is rather persistent and present in 90 percent of the patients is cough, after we say that few other symptoms come into play with such consistency When unilateral wheezing or symptoms of pneumonitis de elopthe lesion has advanced so far that there is obstruction of a bronchus Hemoptysis is present in 50 percent of the patients. Weight loss loss of strength and pain in the chest are late symptoms. Consequently in cancer of the lung it is refreshing to people who have the responsibility of carrying out definiti e treatment to see the patient before all these symptoms appe r We have all seen people with primary carcinoma of the lun, who te relatively asymptomatic and in whom the lesion was discovered by a fourine roentgenogram of the chest I saw this pa tient in consultation as d d the civilian consultant in thoracic surgery and it was our opin on that the man had carcinoma of the left lung based on the fact that the mass was in the hilar region. My second choice was one of the 1 s ons of the lymphoma group You will notice on the protocol that we were so sure of the diagnosis that we operated on him five days before Christmas, and that is a time when no one wants to be in the hospit 1 including the doctor

Clinical diagnosis

Carcinoma of lung with a etastasis to hilar nodes

Dr Emil Maltry Cr lu Consulta Leol gy Mai Ellus F USAF (MO Ch f i Thena Sergery See to a.

Dr Beard's diagnosis

Carcinoma or lymphoma of hilar nodes

ANATOMIC FINDINGS

Deter Felt- At operation we found a mass in the left hilar region which seemed to involve the parenchyma and adjacent nodes. It was our opinion that the lesion was a carcinoma resectable but probably not curable. We started a block dissection high above the palpable mediastinal nodes and submitted a node to the pathologist. It might be wise for the pathologist to discuss his findings here. Then we will go ahead with the discussion of our surgical treatment.

Doctor Simon Fortunately we encountered on frozen section a lesion rather easy to identify as granuloma and not tumor. We considered that sarcoid was the most likely diagnosis but could not at that time rule our some of the other granulomas. Subsequently permanent sections showed extensive involvement of nodes by focal accumulations of epithelioid cells and multinucleated giant cells. Caseous necrosis was absent A very few lymphocytes were present in the focal lesions which tended to be sharply circumscribed. Although the focal lesions were of variable size they showed little tendency to coalesce. Some of the giant cells contained asteroid inclusion bodies. In some areas there was considerable fibrosis apparently the result of fibrous tissue re placement of granulomata Acid fast and Hotchkiss McManus stains failed to reveal any organisms. Material from a saline suspension of the tissue was cultured on blood agar chocolate tellurite Sabouraud's agar and Lowenstein's medium and inoculated into a guinea pig. These procedures failed to demonstrate a causative agent

Dector Foir- After we got the frozen section diagnosis we had to consider the diagnosis of sarcoid but the mass felt like a carcinoma We sent Dr Simon a second node and he was consistent in his diagnosis. Then our problem was whether or not we should submit the man to a pneumonectomy for sarcoidosis or to close the chest. It was our decision not to remove his lung because to get rid of the lesion would interfere with the vascular channels to the lung to the extent that it would require total pneumonectomy. Therefore after submitting the nodes we closed him Of course we were concerned as to whether the disease would progress remain stationary or regress. The man was stationed here at this base and we obtained a roentgenogram of the chest on him some two months after operation. Do you have that here Dr. Kohl?

Doet r Kohl This film was taken in February 1954 (fig 3) This is after operation of course and the lesion is quite a bit smaller. It is not completely gone

D eter J nsen Thank you very much Any other discussion?

C pt. Thomas R. S mo USAF (MC) Chi f of P th logy S ti

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p In the postoperative period we thought rather seriously of treating the patient with cortisone. However, because the lesion seemed to be regressing and the nations did not want to stay in the hospital we thought that we would have no means of evaluating its effect Scalene node b opsy for the possibility of Boeck s sarcoid had been considered but it was believed that this so resembled a malienant lesion that no further time should be used for diagnostic procedures



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Anatomic diagnosis

Boock s sarcoid of hilar nodes

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Tuberous Sclerosis

Report of Two Cases and Brief Review of the Literature

ROBLEY D SMITH III First Lieutenant, USAF (MC)
OSCAR L SAPP Captain, MC USA
JOSEPH F METZGER Captain, MC, USA

T UBEROUS sclerosis was first described in 1880 by Bourneville as a symptom triad consisting of mental retardation, epileptiform seizures, and adenoma sebaceum, accompanied by multiple tumerous nodules of the brain The complex was first called Bourneville's disease, but because of the "potatolike" appearence of the brain nodules and the fact that the nodules became partially or completely calcified in later years, 12 the disease is popularly called "tuberous sclerosis"

The disease primarily affects tissue of ectodermal origin, 1-4 such as that of the skin and brain. However, many cases have been reported in recent years in which tissues of mesodermal and even endodermal origin have been affected such as in lesions of the kidneys, spleen, liver, thyroid, and bone. Polyposis of the colon has been reported as part of the eath.

Most authors classify tuberous sclerosis with the neurocutaneous syndromes which include the Sturge-Weber syndrome neurofibromatosis (von Recklinghausen's disease), and von Hippel Lindau's disease's All of these entities are primarily defects in tissue of ectodermal origin and many similarities of these entities are noted Dickerson' has suggested that the syndrome should be described under one entity and that no clear cut differentiations should be made

There is a much higher percentage of reported tuberous sclerosis in Europe than in America Ross and Dickerson' reported an incidence of about 0 0002 percent in the general population, and Dickey. found that 0 01 percent of admissions to institutions for epileptics and feeble-minded in America was due to tuberous sclerosis while Europe had an incidence of 0 6 percent. There has been no reported difference in sev incidence

The first symptom is usually that of mental retardation. The patient is slow in learning to walk or talk, and in other basic developments. Cases in which there was no apparent mental

Fom Wit Red Army H spital Wishingt n D C. Lt Smith is now assigned to U S. Ai F c H spital Mo dy Air For e Ba e Ga

retardation and adjustment to environment was good have been reported however Epileptifom seizures may or may not become manifest but whon present they usually begin between the ages of three to six years. The seizures follow no set pattern and may be mixed (Jacksonian grand mal petit mal, or any combination) and may vary from one extreme to the other. Five to 10 seizures may occur daily or there may be years between episodes. The seizures can usually be controlled with the standard anticopileptic drugs at although the effective doses are generally much higher than required for the usual patient with epilepsy. It should be strongly impressed on the attending physician and family of the patient that frequent and periodic blood cell counts are necessary for patients who take large amounts of anticipileptic drugs. Many cases of aplastic anemia have been reported in patients taking these drugs and at least five fatal cases have been documented.

Adenoma sebaceum is the most common skin lesion seen in tuberous scierosis' and is usually found in butterfly distribution over the nose cheeks and on the chin. The lesions are resistant to medical therapy but are sometimes improved with radiation Surgical methods are sometimes employed to remove the facial papules

Changes in the hands and feet have been noted montgenographically by Berland and Dickerson. Berland reported a senses in which 85 percent of the patients showed osseous lesions of the hands and feet The lesions are usually in the form of cystlike changes in the phalanges irregular cortical thickening of the metacarpal and metatarsal bones and patchy areas of cortical thickening associated with cystic lesions Budenz' noted osseous lesions of the rib humerus and femur

Often a pronounced anorexia may be a major complaint but is not common enough to warrant inclusion as a diagnostic aid

On several occasions the disease has been diagnosed by the operatine of ocular lesions. These lesions usually arise from the retina and are most often flat gray oval timors 1.0 Cular lesions are not a consistent finding but they have been reported in as many as 25 percent of the cases

Electroencephalographic studies by Dickerson and Hellmanic indicate that abnormal patterns are formed in a significant number of patients with tuberous sclerosis. The percentage was higher than in institutionalized epileptics without tuberous sclerosis. However the patterns were not specific or definite enough to be of diagnostic value.

CASE REPORTS

Case 1 A 24-year old woman was admitted to this hospital on 1 November 1953 complaining of fever, menorrhagia, ancrexia, and extreme weakness of 24 hour duration. Her past history was essentially negative and noncontributory.

Past history The history was obtained from the patient's mother who reported that the patient was apparently normal at birth and developed normally in her early years. The mother also stated that at five years of age the patient had an illness which was rather scute in onset and with associated mental confusion and "nervousness" A private physician made the diagnosis of encephalitis No other pertinent details were available Following this episode the patient developed aphasia which has persisted At seven years of age she began having convulsive grand mal seizures, apparently precipitated by emotional upsets. The family reported that the convulsions occurred more frequently through the next several years During this period, symptoms of mental deficiency were also noted It became obvious as the patient grew older that she was markedly retarded She was seen by several physicians during the next several years and the general opinion was that these findings represented sequelae of the "encephalitis" incurred at five years of age

Following the menarche, at the age of 12, the convulsive sei zures become more frequent and were particularly aggravated at the time of the menses She was also extremely nervous, cried easily, and became excited by loud or sudden noises During the next several years she developed sudden periods of syncope which did not appear to be associated with the seizures For this reason she was never left alone. In her late teems she some times limped or intermittently dragged her feet.

For five to six years prior to her admission she was given various anticonvulsant medications consisting mainly of barbiturates, but there was little or no improvement. About eight months before admission she was given three capsules daily of a combination of 0.1 gram of mesantoin (methyl-phenyl ethyl hydantoin) and 0.032 gram of phenobarbitol. With this medication the seizures became less frequent and the convulsions less severe. At the time the medication was prescribed, the physician advised frequent evaluations and blood cell counts. This was not strictly adhered to because of frequent changes of station required by her father, an Air Force sergeant. At the time of admission she had not had a checkup for about five months.

Present illness The patient was in her usual state of health until 24 October 1953, at which time the mother noted large,

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blush ecchymotic areas on the patient's trunk which became more widespread and prominent. About 36 hours before admission she developed generalized petechiae and edema of her right leg. The day prior to admission she began to have marked vaginal bleeding. This occurred 10 days after a normal period. Her tem perature rose to 104 F. Luter that same evening she developed a moderately severe epistaxis and bleeding from the gums.

Physical examination On admission the patient's temperature was 102 6 F pulse 136 (regular) respiration 24 blood pres sure 110/70 She appeared acutely ill and was very restless and un-co-operative There was a pronounced pallor of the skin and diffuse areas of ecchymosis were present over her trunk and extremities. She had the general facial appearance of a retarded child and not of a 24-year-old woman. She was unable to speak but seemed to understand instructions. She clung forcefully to her mother and would cry out if left alone Examination of the head was not contributory The pupils of the eye were round and regular but responded to light poorly There was fresh and old blood in the nares nasopharynx and at the gingival border There was moderate gingival hypertrophy with extremely pale rucous membranes There were many teeth missing and caries were numerous in those remaining. The skin showed splotchy areas of ecchymosis over the entire body and especially over pressure points. There were petechiae present on all four extremi ties and on the anterior chest beneath the left breast. The lungs were clear except for a few high pitched rales in both bases Except for poor tone qualities and a tachycardia the heart was not remarkable Examination of the abdomen showed poor muscular relaxation from lack of co-operation. The liver and spleen were palpable two fingerbreadths below the costal margins. The peripheral tendon reflexes were hypoactive. There was a positive hernig's sign and a bilateral Babinski. The fingers were long and tapering Otherwi e the extremities appeared normal Pelvic examination was deferred but gross vaginal bleeding was present.

Laboratory findings Complete blood cell count on admission howed 25 million erythrocytes hemoglobin 84 grams and 1500 leukocytes with 100 percent lymphocytes Sedimentation rate was 72 mm at the end of the first hour Hematocrit was 20 Urnalysis (cathetenzed specimen) showed 1 plus albumin and 10 to 20 white blood cells On the second hospital day the erythrocyte count was 24 million and hemoglobin 81 grams Urne culture was negative Rickettsial agglutinations were negative Six days following admission the leukocyte count was 950 with 100 percent lymphocytes The erythrocyte count gradually fell to 1.4 million and the hemoglobin to 5 8 grams on the day of death

Cowse in hospital On the day of admission a sternal marrow aspiration was performed, and the diagnosis of aplastic anemia (pancytopenia) was made The patient was given 300 mg of cortisone daily in divided doses and daily transfusions of fresh whole blood She was seen in consultation by the gynecology service and given 25 mg of methyltestosterone in sesame oil every eight hours to suppress the profuse uterine bleeding She was also given 30 µg of vitamin B,, and 5 mg of folic acid three times daily No detectable change was noted during the following few days In spite of massive doses of broad spectrum antibiotics she continued to run a daily temperature of spiking character, to 104 F Bleeding from the nose, mouth, ranging from 102 and vagina continued, and two days prior to her death she had bright rectal bleeding On 9 November she became much weaker and continued to demonstrate the severe hemorrhagic diathesis Her tachycardia increased and her blood pressure became difficult to maintain above 70 mm Hg systolic Her general condition became progressively critical and on 10 November at 0520 hours she lapsed into coma, developed acute vascular collapse, and berb

Autopsy findings The findings at autopsy consisted of aplasia of the bone marrow with generalized abscess formation in the heart, lungs, liver, kidneys, and brain

In addition, the following findings of tuberous sclerosis were present. The brain weighed 1,235 grams. Scattered over the surface were gyri which were irregular, mushroom shaped pearly white deformities with umbilicated centers (fig. 1). In other areas the gyri were of normal configuration but were pearly white blended with the underlying white matter and there was a lack of the usual stripe of cortical gray matter in these areas (fig. 2). In the white matter there were several large areas of calcification. In the homs of the lateral ventricles were numerous bead-like projections into the lumen (fig. 3). Some of these projections contained areas of calcification.

Microscopically these deformed cortical areas showed a complete and widely scattered disorganization of the usual cellular layers of the gray matter There were numerous large and bizarre multipolar, abnormal glial cells in the outer zone of the cortex there were coarse bands of fibers running tangentially Sections of the ventricular nodules revealed that these were made up of coursing bands of spindle-shaped cells with large areas of calcification

Other associated lesions consisted of a lipoma of the heart, a hamartoma of the liver, a hamartoma of the myometrium, an adenoma of the thyroid gland, and a choristoma of the kidney This choristoma of the kidney consisted of an extension of the

cellular perirenal fat through the capsule of the kidney There also were islands of adult fat lying out of continuity in the kidney cortex



Figur 1 (case 1) A larg d formed, mb licat d gyras ca be s en on the left occsp tall be of th brai

Case 2 A 13 month-old daughter of an officer was first seen at this hospital because of an abdominal mass Physical examination revealed bilateral upper abdominal masses Surgical exploration was performed and the patient was found to have bilateral polycystic kidneys The cysts were drained and the defects repaired The patient had several severe and unexplained convulsive seizures following surgery and frequent upper respir atory infections. At 25 months of age the patient developed many tiny lesions on the cheeks nose and chin which seemed to contain dilated superficial capillairies."

At two and one-half years while the patient was in the hos pital for a checkup the right kidney was found to be definitely palpable and irregular in size and shape. An excretory urogram revealed functioning kidneys with marked dilatation of the right renal pelvis and dilatation and blunting of the calyces. The facial lesson was noted again at this time and appeared to be more pronounced, Normal height 36 1/2 inches weight 32 1/4 pounds



Figure 2 (case 1) Cross section of a portion of the occipital pole of the brain showing a gyrus with a large area of umbilication. The gray matter of this gyrus is pearly white and poorly defined from the underlying white matter.

and developmental progress were noted at this time. The patient was walking and talking well

The facial lesions were identified as adenoma sebaceum (fig 4) A diagnosis of tuberous solerosis was made on the basis of the kidney lesions, unexplained convulsive seizures, and adenoma sebaceum

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Laboratory examinations including an electroencephalogram revealed no abnormalities except for those found previously during the excretory urogram. No intercranial calcification was detected on the roentgenograms of the skull

At four years of age the adenoma sebaceum had become more pronounced It covered the nose and cheeks in a butterfly distri button, and was more prominent on the chin Roentgen tay treatments were given, but there was no improvement Excretory urograms performed at this time reverled a nonfunctioning left kidney and a moderately severe hydronephrosis of the right kidnes



Figure 4 (case 2) Adenoma sebaceum as noted at three years of age

At four and one-half years of age, the patient again had several unexplained convulsions which lasted about a minute. There were no aftereffects and no history of headaches. A repeat electroencephalogram, made while the patient was awake, revealed no abnormalities

At the present time the facial lesions are much more prominent and pronounced than ever before They are more numerous and appear to be spreading There is a large, firm mass deep in the right abdomen The blood pressure has been consistently normal and the blood urea mitrogen has never been over 20 Physical examination is otherwise essentially normal

There has been no history of mental retardation and the patient has made a very good adjustment to her environment

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We believe that the kidney lesion represents a renal hamartoma frequently seen with tuberous sclerosis. Although the patient is progressing well at present the kidney lesions convulsions and adenoma sebaceum justify the clinical diagnosis of tuberous sclerosis

COUNTENT

Tuberous sclerosis is a symptom triad consisting of mental retardation entlentiform sergures and adenoma sebaceum The disease primarily affects ectodernal tissues but lesions of tis sues of mesodermal origin have also been reported It is a rela tively uncommon disease but the prominence of symptoms facili tate a comparatively easy diagnosis

The seizures can usually be controlled with standard antiepileptic drugs but the hemogram should be observed carefully while the patient is receiving medication of this type Osseous lesions may be seen on roentgenographic examination in over 50 percent of the cases Ocular lesions and abnormal findings shown in electroencephalograms may be of help in the diagnosis of the disease

Of two case reports of tuberous sclerosis presented, one pa tient died of pancytopenia following drug therapy. In our opinion the existence of aplastic anemia is probably related with prolonged uncontrolled mesantoin therapy We cannot state with absolute certainty that this drug was unquestionably the causa tive agent of the aplastic anemia in our patient but we believe that it probably was The other patient was followed from her first admission up to the present time

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Subluxation of the Head of the Radius in Children

DAVID F EUBANK Captain, MC USAR

THE "pull syndrome" or "nursemand's dislocation" occurs frequently and should be easily recognized and treated. The lack of discussion of this condition in several major pediatric textbooks, however, as observed by Kanter and Bruton, is evidence that it has not been sufficiently emphasized.

Since August 1953, subluxation of the head of the radius has not department of this hospital. In a fourth child, seen earlier in the night emergency room, the diagnosis was not made, all though the history and clinical findings warrant inclusion in this group During this period ending 1 February 1954 there have been 3,891 pediatric outpatient clinic visits.

CASE REPORTS

Case 1 On 17 November 1953 the father of a four and one half year old girl pulled her arm in an attempt to pick her up against her will Immediately after this maneuver the child complained of pain in the region of the elbow and due to discomfort refused to allow the father to examine it Two hours later I saw her in the pediatric clinic The only positive physical finding was pain ful supination On reduction of the dislocation, there was an audible and palpable click The child was immediately able to use her arm freely A roentgenogram demonstrated no abnormality

Case 2 A two and one half year old boy presented the following history on 16 December 1953 During play with an older sibling, the boy's arm was pulled with considerable force Immediately afterward the child refused to use the injured arm, later he was restless and awoke several times during the night The next day when I examined him, the only physical finding was painful supination A palpable click was felt on reduction of the dislocation The arm was then used freely and without discomfort. The roentgenographic findings were within normal limits

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The past history revealed a previous episode of a like injury to the same arm At the age of 21 months when he was being helped from the family automobile his arm was pulled He be care irritable and showed obvious discomfort in region of the elbow A physician diagnosed his condition as a possible vita min deficiency Roentgenograms were not made The child con tinued to be fretful and evidenced pain in the elbow for four days Suddenly he began using the arm and showed no discom fort. A spontaneous reduction is the most probable explanation

Case 3 On 18 January 1954 a three year old girls arm was pulled while tumbling at play A pop was heard at the time of injury She experienced pain in the elbow region refused to use the arm and was restless and fretful during the night. The following morning when I examined her the only positive physical finding was painful supination. On reduction of the dislocation a nalnable click was felt and supination free from pain was immediately possible A roentgenogram showed normal findings

Case 4 During play on a swing on 23 March 1953 a four and one half year old boy s arm was pulled forcefully by an older child Immediately and for the two days following the boy com plained of pain in the elbow region and refused to use the in jured arm Medical attention was then sought and the boy was examined in the night emergency room. The only physical finding reported was painful supination and a roentgenogram demonstrated no abnormality Although a diagnosis of subluxation of the head of the radius was not made the boy freely used the injured arm without pain shortly after the physician had manipulated it in examination thus indicating reduction of the dislocation In my opinion the history and clinical findings in this case warrant its inclusion in this series as another case of subluxation of the head of the radius

COMMENT

Subluxation of the head of the radius in children is an anterior dislocation of the proximal cartilaginous head of the radius through the annular ligament It is most commonly observed in children between the ages of two and five years and particularly in those children who are learning to walk. The history usually reveals a sudden perk or pull at a time when the child's arm is in a position of extension elevation and pronation Following the injury the child experiences an onset of pain in the region of the elbow which causes him to hold his arm in a position of extension adduction pronation and slight flexion at the elbow Any manipulation or use of the arm is avoided. The parents may seek advice late in the evening because the child is uncomfortable when attempting to sleep

Double Urethra

UROUHART L MEETER L t nant Col nel, USAF (MC)

DOUBLE urethra in the male is considered a rare congenital abnormality by Slotkin and Mercer who cited De Berne-Lagarde that only 38 cases had been reported until 1932 Only scattered reports have appeared since that time These au thors also stated Chauvin has divided these cases into five types (1) complete reduplication from glans to bladder (rarest type) (2) incomplete reduplication accessory urethra ends blindly proximally and lies ventral to true urethra (3) incomplete reduplication accessory urethra ends



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and lies dorsal to true urethra (4) Y urethra with accessory urethra ending in true urethra distal to external or internal sphinicter (5) Y urethra with accessory urethra opening at penoscrotal junction and joining normal urethra somewhere proximal to this. The accessory urethra may also end proximally in the seminal vesicles as noted by Fergusson²

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Slotkin and Mercer believed that the most generally accepted theory of the cause of double crethra "is that the anomaly is due to a continuation of the splitting process of the correctal septum with a consequent bifurcation of the crethral anlage into a dorsal and ventral portion, partial or complete "! The symptoms vary from none to incontinence, if the opening is above the splincters, there may be dorsal angulation of the penis of a double stream of crime if crethritis is contracted, a chronic recurrent crethral



Figure 2 Roentgenograms of bladder accessory wrethra and normal wethra showing the blind ending of the accessory wethra nea the internal sphincter and the lack of communication between the two wrethras

discharge that is difficult to treat may result. Surgical treatment is indicated for incontinence or excessive dorsal angulation of the penis Fulguration of the accessory tract may be necessary to clear a chronic discharge

CASE REPORT

A 22 year old man was admitted to this hospital on 22 January 1954 complaining of two openings in his penis. He had contracted

gonorrhea in December 1953 Treatment with penicillin cleared the discharge from the normally situated opening at that time but the discharge persisted from the dorsal orifice During the first admission the discharge responded to oxytetracycline (terra mycin) irrigations. The patient was returned to duty but the discharge recurred shortly thereafter. He was readmitted on 2 March 1954.

Physical examination findings were normal except for the penis. The glans penis had a dersal epispadic cleft with a normally situated external meatus and an accessory orifice at the proximal extent of the cleft as well (fig. 1). The dorsal orifice was probed to a depth of 17 cm with a ureteral catheter. There was slight dorsal angulation of the penis. Reentgenographic examination of both urethras indicated they were not intercommunicating. The ventral urethra appeared normal, but the dorsal urethra was small and ended just under the vesical mucosa near the internal sphinicter (fig. 2).

The patient's dorsal urethra was irrigated with oxyletracycline (25 mg per ce 5 to 10 cc per irrigation) four times a day and the discharge gradually disappeared On 16 March 1954 under general anesthesia a ball point cystoscopic electrode was passed up the accessory urethra to a distance of 17 cm and the urethra fuluranted as the instrument was slowly withdrawn

The patient was given streptomycin postoperatively for five days and penicillin for 15 days In an effort to prevent an in crease in the dorsal angulation of the penis due to postoperative fibrosis he was also given cortisone as follows 300 mg on 16 March 200 mg on 17 March 100 mg daily from 18 March to 7 April 50 mg from 8 to 13 April and 25 mg from 14 to 21 April A fibrous cord was noted along the course of the fulgurated urethra but this has gradually disappeared Five months after fulguration there was no fibrous cord and no increase in the slight dorsal angulation of his penis The accessory orifice has closed

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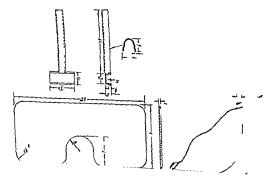
f U 1 gy pp 24 25) 1946 3 A ld M. W nd Kayl W M D bl wrthr carprt J Urol 70 746-748

CLINICAL NOTES

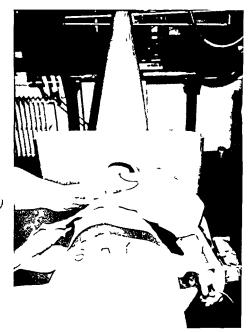
A Simplified Arteriographic Shield

FREDFRICK R LATIMER Lieutenant (MC) USNP
FRANCIS PERRELLY Hosqual Corpsman, the d class USN

THE ADVISABILITY of adequate protective devices for those engaged in performing reentgenologic diagnostic procedures needs no comment. The mutilated hands of physicians and dentists of earlier generations offer mute testimony of the dangers involved



by our maintenance department and therefore our problem reduced itself to the elimination of the radiation spray below the cone and of the secondary radiation from the patient



Fgu 2. Th b ld plac pn to 1 tonof contatm da.

With a tin snips a piece of one-eighth-inch thick lead was fashioned in the dimensions shown in figure 1 For stability

the edges were rolled around a one-quarter inch diameter bing rod which had been previously bent to the desired she Two pieces of channel iron were welded to some obsolete to attachment slides and these then served as upright posts the concavity directed inward. The finishing touches were ad by cutting a piece of rubber laboratory tubing lengthwise slipping it in place over the free edge of the lead in the aper at the bottom of the shield.

Our atteriograms are done in the usual manner by inserting needle percutaneously into the carotid artery Using the chan iron concavities as guides, the lead shield is carefully slipp into place by lowering it down over the patient's neck prior the injections (fig 2). The rubber tubing over the free edges the metal serves to protect the patient's neck from abrasion. We the barner in place the exposures are made in the usual man in the anteroposterior and lateral positions. The device reduct on immeasurable minimum the amount of radiation in the zeroff the operator's hands as recorded by the Victoreen r met

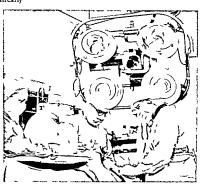
OMNIBIOTICS

The physician in practice and many of his patients as well constantly on the lookout for some simple substance or formula wh can be applied with universal success. The busy practitioner particularly desirous of having some major weapon on which he calways rely to be successful in all types of infections and wh would thus relieve him of the responsibility and trouble involved the complicated or even simple diagnostic procedures. Whenever so a cure-all has been offered it has usually been grasped with enthulasm and widely and indiscriminately applied. The disappointm which invariably has followed has always been proportional to imagnitude of the univarranted promises and claims that had been he out. On the other hand, the discriminate choice of therapeutic age only on the basis of proper indication and proved efficacy for the desired purpose though perhaps more difficult to practice may in a long run be less disappointing and more rewarding.

—MAXWELL FINLAND M D
in B stish Med cal Jou nal
p 1121 Nov 21 1953

ARMY S COLOR TV BRINGS OPERATIVE TECHNICS TO CLASSROOMS

A color television station WRAMC TV has been installed at Walter Reed Army Medic 1 Center for educational use at the hospital and the graduate school More versatile than conventional audio-visual technics color television permits instantaneous viewing of events by unlimited audiences at remote and different locations and medical surgical and laboratory technics can be presented clearly graphically dynamically



C lort levisi g of an abdom al ope at on at Walt R d Army M d al Cente L fit on phi Capia Bib lyn H gb op at g oom rs M j Wiltiam C R t USAF b f ident gen al su g ry Col IR bet T G ts, cb f of b S gc I D parlment, C Ion I Ha very C. SI cum cb f of ts hospitals A the a and Ope at e S e, a d Mar Gen al Leona d D H aton Command g G

A 411/2-pound camera is suspended in a specially designed lighting fixture Lights and camera are synchronized so that when the surgeon has the best lighting on the field of operation the camera operated by remote control will pick up the scene without obstruction. The surgeon wears a chest microphone and hearing-aid type earphone keeping in constant communication with students in a viewing room He lectures and answers questions as he proceeds with the operation

PROMOTIONS OF OFFICERS

The following officers of the military medical services on active duty in the Army, Navy, and Air Force have recently received permanent promotions to the rank indicated

Medical Corps

Elwyn N Akers Lt. Col USAF Vincent] Bagli Capt USAF Henry M Cook Jr. Maj USA Longsure t C. H milton, Maj USA Longsure t C. H milton, Maj USA Arche A. H ffm n, Lt. Col USAF Rob nt J McCann Capt USAF Chaile L. McKe n Capt USAF Byron G McAibben Col USAF Alvin S. Natinson, Capt. USAF Alvin S. Natinson, Capt. USAF

Frank A Neuman May USA
John C Patterso May USA
M trin A Pfotenhauer May USA
Thair C Rich Gol USA
Frederick J Sheffield Capt USA
Alfit d G Si g May USA
Robert J Solomon Capt USAF
Heary Thompson May USA
Ottis L Vad n Capt USAF
Richard J Ward, Capt USAF
Richard J Ward, Capt USAF
Homet E Woosley Jr Capt. USAF

Dental Corps

George F Coons Capt USAF Jam s M Epperly Bng Gen USA Alb rt M Holle bach Col USA Robe t D Jeronimus Capt USA Fredr ck A. Kalson J Capt USA Fraz W Log Capt USAF Chils J Mahan Capt USAF K on th L Stewart Capt USAF J mes A Turner Capt USAF Dailm V aino Capt USAF

Veterinary Corps

Chal M Brine Capt USAF
Rich id E Brison Capt USAF
William E. Jenni gs Col USA
L lie E. M ck troth Capt USA
Floyd E. M rice Lt Col USA

R chard B M rgan Capt USA Robetk N Ison May USAF Donald W Ringl y Capt USAF Will am E Roth Capt USA G org H Zach le Jr Lt Col USA

Medical Service Corps

Gour P Becknell J Ist Lt USA He bett E B II st Lt USAF Rob it H Cottne Ist Lt USAF F ank H Dow II ist Lt USAF Go don field Ist Lt USAF Sheld a L F end Ist Lt USAF Ell s F Hall J Ist Lt USAF R b il Littl Ist Lt USAF Do gl V L d May USAF

Walter V M Intyre 1st Lt USAF Harold D N wso 1st Lt USA J eph P R s Aap USAF George M Sh. 1st Lt. USA Lloyd E So J s ph M Tugel J 1st Lt. USA Robe t M V H n, May USAF Alla T W es 1st Lt. USAF W II m L William 1st Lt USAF

Nurse Corps

No Alm May USA
M 19 L B dl y Ist Lt USA
M 19 L Co ch Ist Lt USA
M 19 I Co ch Ist Lt USA
Mur l E Eck lbe 8 Capt. USA
Elea M Gar May USA

El eK Hoi May USA M y F Hyma May USA Rhod U J h May USAF El beth M K nn dy Ist Lt USAF Marga t E McK n i May USAF

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The following officers have been promoted to the temporary rank undicated

Medical Corps

Ralph K Brook Cometr USN Ralph K Brook Comade USA
Augu A Bun Copt USAF
R bert R Burw II Copt USAF
Edw dT Byrn Copt USAF
Clob L Courty ght, Copt USAF
Clob L Courty ght, Copt USAF
Catl E Puer Comad USAF JhHCox, Capt. USV FkTGo Gol USA MILH Capt. USAF 1 cob G H bbl Get LS\ David K z, Capt USAF L roy L K y Capt USV Donald M L p Capt USAF Alva E Mill Col USA

Will m.J. N. ikurk Comdr. USV Byr A. N. b. l. Col. USA R ben H N b l J Capt LSAF Cal B R Capt USAF Raul E. Rod gue Capt. USAF Pulja Capt USAF TITS Go Capt USAF J b B Shapir Capt USAF
L w S. Sim J Capt USN
M to Sp gelm Capt USAF Sal to V Soul overo Capt USAF

Dental Corps

Leo L Bolton, Capt USAF Qu T Cl k Capt USAF G E Co tad Capt USAF Thom D G 1 Condt US
Thoma A Gun Capt. LSAF Sol mo Guz Capt. USAF H so J L nour Capt LSAF

Jeph L L Copt USAF Jeph L. Lopt Usar Graid A. M. Crek. Col. USA Harry B. McIon. Capt. US. Rib d V. P. Cornal USN D. d.C., S. bl. a, J. Capt. USAF R. be. C. Sha. et J. L. L. Col. USA Will on R. Stanmy. Capt. USN

Medical Service Corps

Dolor L A Chall g 1st Lt USAF Cora]] 1 t Lt USAF B nn tr R. De y Ist Lt. USAF G org A. F d J Ist Lt. USAF Irv g F Comdr USY Edward F Haa Compt USY

B ni E Harman, Ist Li USAF
Gorg F H I I w Li Col USA
L w Li Let Compt USY
R be E V of Ider Li Col USA

M que E. K ur J Cometr USN A h K mN Ist L USAF Clif dR L wso Comdr USN

Nurse Corps

Arcach 1 B Lt. Comdr US's 1 quel Y Bak 1st LL USAF El J B nt l 1st LL USAF E S Barto 1st LL USAF Edna M Da ghtry LL Comd USA Dorothy E D va y 1st L1 USAF Al H. Dom que LL Comde USA El be h M. Dow LI Comer USN All Problem But Lt Commit USN

Int H Go be t, Int Lt USAF

Fan L H g Int Lt USAF

P M Hubba d, Int Lt USAF

R ha 1E Thom Lt Commit USN

Don R. Klime 1st Lt. USAF N thal A. Knox, Lt. Comdr USV Do thy L. M # 1st Lt. USAF Ber ha G. M h II Ist Lt. USAF V A. P gr z, Lt Comdr USN Edna M Sch p Lt. Comdr USN E th L Schm dt, Lt. Comdr USN

OFFICIAL DECORATIONS

BRONZE STAR MEDAL

Geog W B n Capt MSC, USA Gordon A Bohn Lt Col MISC USA Lily J Cha Ist Lt ANC USA Georg L Donaghu 1st Lt MC USA Will m H Godf y Capt. MSC USA George W Holcomb Jr Capt MC USA Howard W Steninger May MSC USA Claude L Hook : May MSC, USA Philp C Kug t 2d Lt MSC USA Oue tis H Miller Capt. MSC USA Max E Pfu tz Man MC USA

Thomas P gb Lt Col MSC USA James B R Ily May MSC, USA Jo R R gual 1st Lt. MC USA Willi m Saver Mar MC USA James L Stamb gh Jr Capt MC, USA Robert E. St rn, Ist Lt DC USA Bogusl w F W dolkow ki Ist Lt MC USA Chester A Williams May MSC, USA Ell otte J Williams May MSC USA

COMMENDATION RIBBON

Joh W Alexa de 1st Lt MSC, USA Wills m W B en s 1st Lt MSC USA T B tz Ist Lt ANC, USA Francis L Bochu, Capt MC, USA Will m D B oks 1st Lt MSC USA H k V Bullard Jr Ist Lt MC, USA H ry P Capozzi, 1st Lt MSC. USA Paul A Chapman Capt MC. USA Rob t N Chr n 1st Lt. MSC USA Rita A Cl vel d Capt ANC USA John Co 12 s 1st Lt. MC USA Con tantin Cope 1st LI MC USA G g R. Cote 1st Lt MSC USA Al xa de W D Ambrosto May DC USA Matth wF D mond 1st Lt MSC USA John L Di 1 to May DC USA Lydia M Domett Capt ANC, USA Lest M Dvk II Ist Lt MSC USA Phill p P F 1 d 2d Lt MSC, USA Rob t D Gamble Man MC USA M vs G ldstein 1st Lt MC USA G o g G Graham Lt (MC) USNR G tan G Gr gost May DC USA Alf C. Groth Capt MSC, USA D v C Harper 1st Lt MSC, USA R g r C. Heil 2d Lt. MSC USA F dW Her bey Capt. MSC, USA Emm B H sk Capt ANC USA R bet W H pks s Lt (MC) USNR Rob & M Hubbard 2d Lt AISC USA H A. H atsm J Ist Lt MSC, USA M L I man Ist LI DC USA

Matth w A. K zi u kas 1st Lt. MSC USA Richa d A. Kiel, 1st Lt MSC USA Don F Kimm tling Capt MC USA Alf d D Loe y 1st Lt MSC USA I hn D I. w Capt MC USA Clyd I Li ds y 1st Lt MSC, USA R ymo d I L w 1st LL MSC USA Harry D Lyk Capt. MC, USA John R. M nley Capt. MC, USA W vl M tschuk Ist Lt MC USA John M McK ze Jr Ist Lt MC USA Kenn th C M k ls n Ist Lt MSC, USA Fr ncs M Mo gan Lt. Comdr (MC) USN Ge ald G Mullik Capt. MC USA L I H Ozaki Ist Lt MC USA J ss J Pittman, 2d Lt MSC USA Oliv L Rich rds J 1st Lt MC USA Mar A. Rogal Capt MSC USA Ang 1 M Rome o-Graz an 1st Lt MC, USA Leo C. R dy Capt DC, USA Are ld B Sch ff t Ist Lt DC USA Sh Ido C Si gel Capt USAF (MC) William W Smkin Copt DC USA B uno J Stano h Ist Lt DC, USA R chard B St Itz, Ist Lt MSC, USA Arthur P St. Onge Man MSC. USA Jmsk Tomkn Copt MC, USA George H Tsun kan May MC USA Robert D Waller Capt MC, USA Will am L W tten 1st LL MSC. USA Darr II E. W tov Lt (MC) USNR J ba T Zabnsk e Ist LL AISC USA

Okl f Clust r

The name of ff t of the medical ervice who have been ward d dec ratio s by th United State Army Na y or At Free ar publish d in the d partment each mo th following rece pt f f mation from office I sources -Editor

REGULAR DENTAL CORPS OFFICERS CERTIFIED BY SPECIALTY BOARDS

The American Board of Prosthodontics

The American Board of Prosthodontics established in 1946 with the approval of the American Dental Association on 31 August 1954 had certified 163 dentists in this specialty of whom 37 were regular Dental Corps officers of the military services

1. sl R. Allen Lt. Col USAF Will m P Bar J Lt Col USA RyL Bodin J Col. USA

1 dg C, Ch pman Lt. Comd USN H IVA C II II Comet USV

TI W D Comdr USV Lyn C D k en Col USA D dP D bso Comdr IISN

I. w Em ry Lt. Col USA

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Im F bld Lt Col USA Geo g B Foo Lt Col USA William M F wl Capt. USN Ah LF ch Capt USN

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R b L W l b Lt Col USA

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DEATHS

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A MESSAGE FROM THE A M A

In his state of the Union message to the eight, fourth Congress on 6 January 1955, President Eisenhower covered a number of specific items which dealt with our national defense requirements and military planning It is believed that a review of some of these and of those in his military manpower program message of 13 January will be of particular interest to those physicians now on active military duty or who anticipate being called into service in the near future

In his state of the Union message the President pointed out certain fundamentals underlying the administration's foreign affairs and military program (1) He reiterated that our national goals are a realistic limitation of armaments and an enduring, just peace that there is no alternative but to maintain a powerful military force which although designed for deterrent and defensive purposes alone is able instantly to strike back with destructive power in response to an attack (2) He cautioned that we must keep in our armed forces balance and flex ibility adequate for our purposes and objectives. We should not place undue reliance on one weapon or prepare for only one kind of warfare because such a course would only invite an enemy to resort to another type of action (3) He advocated keeping our armed forces abreast of the advances of science in order that they may effectively utilize the new weapons and technics created through our research and development programs

It is significant to note that the message clearly pointed out that the emphases of defense planning were made at the President's personal direction after long and thoughtful study

To attain these fundamental goals, he indicated that the budget for military requirements would stress modern airpower in the Air Force Navy and Marine Corps with increased emphasis on new weapons capable of rapid and destructive striking power In brief it would appear that our national defense will be geried to newer types of planes and airpower coupled with weapons in the atomic and hydrogen class. This could also include the field of long range guided missiles. He further indicated the planning contemplates the strategic concentration of our strength through redeployment of our forces. In addition it provides for reduction of forces in certain categories and their expansion in others to fit them to the military realities of our time.

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The President ut_bed the enactment of legislation to extend for four years the Selective Service Act which expires 30 June 1955 in order to continue to induct men for two years of military service. He stated that for the foreseeable future our standing forces must remain much larger than voluntary methods can sustain. He also suggested legislation designed to encourage military person nel to remain in active service through measures which would provide more adequate medical care for dependents survivors benefits more and better housing and increases in military pay and other allowances.

In his military manpower program message President Eisen hower made the following recommendations for the armed forces

- 1 Continue for four more years the draft law under which men 18% through 25 can be called for 24 months active military duty
- 2 Extend the special Doctor Draft Law" for two years The President stated In the case of doctors and dentists I recommend that the extension be for another period of two years only by that time it is expected that the medical personnel requirements of the atmed forces can be met adequately by other means
- 3 Creation of a new reserve program to be divided into two groups one organized and ready for immediate mobilization the other consisting of men with prior active service nonorganized and subject to selective recall Service in the reserves would be compulsory
- 4 Create a new training program for persons 17 and 18 who would serve for six months at a pay of \$30 per month and then go into the active reserves for nine and one-half years
- 5 Send men volunteering for the National Guard through an initial period of basic training in the active forces
- 6 A selective pay boost averaging 6.7 percent. Career men and specialists would get most. No raises would be given during the first two years of enlisted service or the first three years as an officer.
- 7 A new dislocation allowance for servicemen with families transferred to a new permanent duty station
 - 8 An increase in the travel allowance from \$9 to \$12 per day
- 9 More lousing for service families and lower rentals where substantial housing is furnished
- 10 Better medical care for servicemens families and an equalization of benefits for survivors of military personnel

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Reviews of Recent Books

WARTIMI PSYCHIATRY edited by Nelan D. C. Lewis M. D. and Bernice Prople M.A. 952 pages Oxford University Press. Inc. N. w York N. Y. 1954. Friec \$15.

A compilation of abstracts of 1166 article and 28 book this volume covers many aspect of the international literature on psychiatry between 1940 and 1948. It represents a sincere effort to provide a timely and valuable reference book for military and civilian psychiatrists. For the purpole of aiding the organization and effective use of knowledge in the prevention diagnosis and treatment of psychiatric disabilities, the authors have divided this compendium into 14 ections covering such subjects a aviation psychiatry psycholography psychoneurology and the appellation psychiatric team concept. Over 200 articles deal with the problems of selection induction and training and those of demobilization and rehabilisation. Many articles describe the legal criminal sexual and psychopath aspects of wartine psychiatry.

The well written abstracts give the scientific reader e ential information for a comprehen ive under tanding of many different p y chiatric problem. Fach section is prefaced by a brief statement giving some of the important scientific principles derived from the eneuing atticles.

Certain defect are pre-ent but do not detract from the intrinsic value of the book. The absence of a ubject index makes it difficult to identify all of the articles dealing with one ubject. Although a real effort has been made to expanize the material only a general categorizing of major ubject matter has resulted. At times extraneous liter attree crops up where lea t expected. At other times abstract dealing with the same subjects are widely expirated from each other. Atticles by the same author often pre-ent similar information so that one or more could have been deleted or indexed as further reference material.

The experienced observer readily recognizes from the multitude of published article, that war conditions involve a tran ient period of marked confusion indecision and vacillation over the proper technics for handling psychiatric problem involving large numbers of persons lie further recognized that many of the principle, of wartime psychiatry previously established as valuable and effective repeatedly undergo a process of reducevery. The efact emphasize the need for the preparation of a general treatice on the principles of wartime psychiatry. Therefore interested investigators should use this book to review and analyze the wartime psychiatric problems presented and

to establish general principles once and for all. This compendium is highly recommended as a necessary reference book which should be available not only in all military and civilian medical libraries but also at command levels for study and evaluation by those persons who play definite roles in establishing the effective use of a nation smanpower. — LIGIGO E GATTO C.1 UNAFIMO.

HYPERTENSION AND NEPHRITIS by A thur M. F bb g M. D 5th dit on larg d and th ghly vi d. 986 pge 49 ll t tins L & F big Ph lad lph P 1974 P \$12 50

The fifth edition of this well known and respected book is the first revision since 1939. Hypertension and nephritis are surveyed in their broadest aspects and discussed fully from the standpoint of vascular function and diagnosis and treatment are emphasized. Seven new chapters and a total of 207 pages have been added. The list of references following each chapter is complete and well arranged. The style is clear direct and in logical sequence with each subheading complete including reference where applicable. There are few illustrations and charts which is regrettable.

Many references are made to items that are of historic interest only an author presents the development of the accepted concept of these conditions with as full an explanation as possible. This enhances the value of the book in many in tances especially where newly developed deas have caused a tevision of previously accepted ones. A partial list of subjects discussed includes recent wo k on pathogenesis of hypertension nectotizing nephrosis diabetic glomerulosclerosis d abetic retunopathy malignant phase of essential hypertension artificial kidney and newer pharm cologic remedies

The book is of value to those concerned with the se conditions and will serve well as a textbook and reference book on the subject.

-WILLIAM S GEORGE Col MC USA

VERTEBRATE DISSECTION by War en F Walk J Ph D 331 pg
Il t ed W B Sa det Co Ph l d lph P 1954 P c \$3 50

This laboratory manual is designed for students of biology as a guide to the dissection of certain vertebrate species and for use in the study of major transf mations that have occurred during evolution It is not an encyclopedic text but it includes directions printed in bold type for the dissection and examination of various specimens in the laboratory. The illustrations are clear well labeled and readily understood in the first three chapters the lower chondates the lampery and the evolution and external anatomy of vertebrates are discussed. In subsequent chapters the various systems are described in which the differences in fishes primitive tetrapods and mammals are covered.

It is believed that this book forms an excellent di section guide and generally accomplishes the objectives of the author

-THOMAS C JONES LL COL VC USA

TEXTBOOK OF ORGANIC MEDICINAL AND PHARMACEUTICAL CHEM STRY 2d edition edited by Charles O Wilson Ph D and Ole Gis vold Ph D 805 pages illustrated J B Lippincott Co Philadelphia Pa 1954 Price \$10

This textbook is for undergraduate pharmacy students who have completed one year of organic chemistry In general the methods of synthesis and chemical relationships are discussed adequately The chapters on physiochemical properties in relation to biologic action and "metabolic changes of drugs and related organic compounds in the body (detoxication) are particularly valuable. It seems unfor tunate that the attempts to classify drugs sometimes according to their chemical properties and at other times according to their pharma cological actions has led to overlapping confusion and inaccuracies Dicumarol and related substances are discussed in the chapter on proteins as are dextran and heparin although heparin also is dis cussed in the chapter on carbohydrates A chapter on heterocyclic compounds includes a section entitled plant alkaloids but only a few alkaloids are discussed other chapters containing the information on morphine quinine atropine and many others. The section on the purines omits 6-mercaptopurine and adenylic acid which are to be found in the chapter on proteins

Sometimes a disproportionate amount of space is devoted to older less useful drugs more space is devoted to the cinchona alkaloids in the chapter on antimalarials than to all the newer drugs. As in many such texts the pharmacological discussions suffer from brevity and lack precision as for example the statement (pages 231 232) that barbiturates cannot cause addiction. There are a number of errors in typography (mercaptopurine page 736 glucose page 594 salicylic page 600 chloresium page 215) and in bibliographic citation (on page 308 k. K. Chen instead of Chen and Schmidt on page 325 reference 8 missing). On pages 461 462 acetophenetidin and acetanilid are listed as N. F. on page 494 sulfapyridine is listed as U.S. P. and sulfa guanidine and ephedrine are listed on pages 493 and 308 respectively as N. F.

It is to be hoped that careful editing of future editions will eliminate these errors in an otherwise satisfactory comprehensive and well written book —PAUL & SMITH GOL USAFR (MG)

THE YEAR BOOK OF ENDOCRINOLOGY (1953 1954 Year Book Series)
edited by Gilbert S Go dan M D Ph D 390 pages illustrated The
Year Book Publishers In Chicago Ill 1954 Price \$6

This book is a most practical and useful collection of abstracts from the world wide literature for 1953 in the field of endocrinology Endocrinology has made such great strides in recent years that nearly every practitioner of the various specialties in medicine and surgery becomes involved in this intriguing and interesting field

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The subject matter has been arranged according to the various en docrine glands and sex organs plus an excellent series of abstracts from atticles on cathohydrate metabolism and diabetes mellitus as well as a summary on endocrine treatment of neoplastic diseases. Even though this book is a compilation of abstr cts by various research workers the material is arranged coherently and more or less according to subtriles A few representative illustrations and graphic charts are also included.

One of the most valuable features is the editorial comment following most of the more important or controversial papers presented Thus book is recommended for all students and physicians interested in the most up-to d te information in the field of endocrinology. It would not serve as a reference book but it does present a great deal of practical information in concise form — URPO R. MERIKANGAS GO. NO. USA

BABCOCK'S PRINCIPLES AND PRACTICE OF SURGERY edid by K l C

J na M D M S (Surg) 2d dron. 1543 pg wth 1006 il
trations d 10 ol plat Le & F bge Ph lad lphi Pa 1954
P e \$18

This is an extensive revi ion of the standard textbook of surgery Principles and Practice of Surgery by W Wayne Babeock Emeritus Professor of Surgery t Temple University School of Medicine which was published in 1944. The book provides the student with an organ ized presentation of general surgery and the surgical sp cialities. The contributors have presented complete subjects in a clear and thorough manner. Emph sis has been placed on surgical diagnosis and treatment with minimal comment on details of technical procedures.

Rec nt advances in general surgery and the b sic concepts have been included in the subject matter. A section on military surgery provides the potential medical officer with a working knowledge of military medici e and outlines the management of the wounded. Thoroughness of the subject matter is attested by the up to date chapters concerning the fast advincing fields of cardiac vascular and thoracic surgery including the surgical treatment of pulmonary tuberculosis.

One hesitates to find fault with a work of such general excellence A typographical error on page 802 causes dihydrotachysterol (AT 10) to be referred to as a potent vitamine A derivative. This will confuse the medical student who has been taught that AT 10 is a derivative of a provt min D one stage before the formation of vitamin D in the process of its development.

Every library for medical students and every physician interested in general surgical conditions should own a copy of this comprehensive surgical text. The illustrations are good it is adequately indexed and there is an excellent b bliography at the end of each chapter.

ARREST OF BLEEDING by Jacques Roskam M. D. 71 pages illustrated Charles C Thomas Publisher Springfield III 1954 Price \$2.75

In this monograph the author presents a general but refreshing view of spontaneous hemostasis despite a probable over simplification of the problem after exposure to the barrage of eponymic abbreviations found in hematologic literature. The subject matter deals with an ana lytic study of spontaneous hemostasis technics and methods pertain ing to bleeding time physiologic study of spontaneous hemostasis pharmacology of hemostatic agents consideration of bleeding time in major and minor hemorrhagic disease prophylaxis and general treat ment of hemorrhage and treatment of thrombosis

The text is lucid and the presentation smooth Twenty one figures of various types aid in emphasizing the salient features of the monograph No index is given but its absence is not missed Eighty three separate references of which about 32 percent are in the United States and British literature are listed

Outstanding features are the statistical approach to bleeding time and the use of the mean bleeding time Concise definitions of hemo philic and "hemogenic" syndromes are given The paradoxical effects of adrenalin on hemostasis are elucidated Experimental basis for re jecting the use of cold and heat in the treatment of bleeding is afforded Some of the medications of interest in the general treatment of hemor those discussed are adrenoxyl naphthogumones sympathomimetic amines pitressin and certain blood coagulants

The monograph is stimulating and should prove of value not only to the internists but to any physician concerned with the problem of bleed ing It will make a fine companion piece to Quick's The Physiology and Pathology of Hemostasis which is listed in the bibliography

-ARCHIE A HOFFMAN LL COL USAF (MC)

FUNDAMENTALS OF OTOLARYNGOLOGY by Laurence R. Boies M D 2d edition 487 pages illustrated. W B Saunders Co Philadelphia Pa. 1954 Price \$7

This excellent book is the second edition of a concise manual on the diseases of the ears nose and throat It is divided into 33 charters with a new addendum on Transudate Disorders in Otolaryngology The bibliographic references are well chosen and listed at the end of each chapter Style format type and organization make for ready refer ence and easy reading Drawings and illustrations contribute remarkably well to an understanding of the text content Each chapter presents the etiology pathology symptomology and generally accepted treatments A thorough revision and some additions have been made by the author to bring the book up to date

This book is highly recommended for the medical student the general practitioner and all medical officers regardless of their specialty -WALLACE E ALLEN Comde (MC) USN

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PSYCHOLOGY IN NURSING PRACTICE by Let D Cow Ph D Al Cow Ph D ad Chais E Sk Ph D 2d dt 435 page Il trat d Th M m Ila Co N w Y k N Y 1954

This edition has been completely reorganized in both content and style. It is the authors intent to present the fundamentals of human behavior and human inter relationships in such a way that they have particular significance to the student nurse. The appendix includes the professional code for nurses and the reference list is up to date and varied. Material is made more meaningful by use of results obtained from pertinent scientific studies.

The expectation that a nutse should excel not only in mechanical skills but also in the art of conversation and other social sciences is emphasized. The following statement however makes one wonder if the authors are thoroughly familiar with nursing trends. When the bedridden patient is the only occupant she (the public health nurse) may render greater comfort by running an errand or by cooking and serving a meal than by giving a bedbath. Does a person call a car penter for a leaking pipe? Would not a part-time domestic servant do a better job in this instance and at less cost to the patient or community? Could not the nurse be released to serve a greater number of people if in turn she tauwebt the servant to give the bedbath?

In reading this book one gains the impression that the ideal nurse is a God like per on who knows just what to do and say at just the right time. Although it is mentioned I believe that much more stress could be pl ced on the necessity of accepting one sown f clings and emotions. Once these are recognized and accepted a nurse could function at top level efficiency reg rdless of her feelings.

This book could best be used as a steppi g stone f r further study Areas of controversy would make good subject material for class d s cussion if used by an instructor who was well grounded in psychology and nurs ng sciences—LEONA WEINER Faill. ANG USA

WHY WE BECAME DOCTORS dtdby Noab D Fb cnt M D 182 pg
Gru & Stratt I N w Yo k N Y 1954 Ptt \$3 75

This is a book to be nibbled It is a paramedical discussion of the circumstances which led many great physicians to enter their profession. Although we speak of medicine as a chosen profession it is apparent from this book that happenstance and propinquity have their roles in the student is determination that he should become a doctor

This volume should be available at bedtime as a sort of mental snack before sleep It may also be taken bid pc c Like salt it is wonderful with other foods but quickly satistes the taste if too much is taken at one time It is a book that stimulates some honest evaluation of the eader sown motives in choosing medicine It will open a door to further study of the fascinating history of medicine

PLAGUE by R Pollitze M D 698 pages illustrated World Health Organization Palais Des Nations Geneva Switzerland 1954 Price \$10

This comprehensive thorough and up to-date monograph on the plague problem is useful for clinicians epidemiologists and workers engaged in plague research. Not a revision, it modernizes and replaces the most recent publication in the English language concerning plague which was compiled in 1936 by Wu Lien teh. J. W. H. Chun. R. Pollit zer, and C. Y. Wu.

The recent spectacular advances in the treatment and control of the disease are ably incorporated in the text from various studies by the author previously published in the Bulletin of the World Health Organ ization and revised grouped and reprinted in single book form While the incidence of plague has markedly decreased within recent years and in some of the endemic centers has ceased to be manifest the author clearly points out that it is not ver possible to be complacent about the plague situation in the world today even though modern scientific advances have shown that the "Black Death is now both a normally curable and a thoroughly controllable disease. The vast primary reservoir of infection among wild rodents throughout certain areas of the world apparently will remain unassailable for a long time and concerted efforts to combat the disease must continue unabated

The book is well documented both the index and chapter references being internationally complete hence the usefulness of this modern book as a complete reference work on the subject of plague

-WALTER R deFOREST LI COL MC USA

PRACTICE OF ALLERGY by Warren T Vaugban M D revised by J Harvey

Black, M D 3d edition 1 164 pages illustrated The C V Mosby Co
St. Louis Mo 1954 Price \$21

This textbook of alletgy is a comprehensive well written authoritative coverage of the subject. Throughout the volume extensive changes have been made from the previous edition. New material has been added, including discussions of the use of cottisone and ACTH pulmonary function tests and treatment of poison may dematitis. The chapters on aerobiology and pollen surveys and the discussion of allergy associated with fungus infections are excellent. In the section on coseasonal pollen therapy, however, the text is incomprehensible.

The author is careful to present several points of view on controversial subjects. For example, the lack of reliability of skin tests to foods is stated, but the fact that many allergists still use them and find them helpful" is presented without comment. This approach makes the book particularly suitable as a reference volume for the general practitioner and internist not practicing allergy exclusively. An extensive bibliography good index and detailed table of contents increases its value as a reference book for actual treatment of patients with al letgy—WARREVH. DIESSYER. Gol. NO. USA

THEORY AND PROBLEMS OF ADOLESCENT DEVELOPMENT by D d P A sub l M. D Ph D 580 p g Gc & & St tton In N w Y rk N Y 1954 P \$10

This volume presents an excellent formulation of a consistent theory of adolescence and includes general principles of develop mental psychology in a manner which should strumlate further tesearch and the formation of empirical conclusions to test their validity. The author has drawn well on the research of the past half century. The emphasis on a need for more systematic attention to preliminary experimentation to test strict theories is a welcome departure from the large scale long range studies on poorly int grated hypotheses in the study of adolescent develonment.

Focusing on the unique characteristic of the adolescent phase of the colors of the author presents a dyn mic concept that includes the cultural influences in stresses on the developing individual per sonality. The process of reorganizing personality aspects particularly during adolescence manifests certain basic uniformities from one culture to another because of common elements in the psychology of transition as well as psychosexual maturation the biologic role of sex and the new traits associated with adult status in the community.

Extensive well selected references are included as well as a bibliography at the end of each chapter. Well written and org nized the book is considered to be very suitable as an advance diext in adolescent psychology for graduate tudents and highly desir ble as a reference. I brary item for psychiatrists clinic l psychologists social workers and bediatricians.

-FREDERICK A ZEHRER LA COL MSC USA

ADMINISTRATIVE MEDICINE ditd by Georg S St o M D 16page J h Ma y J F nd t N w Y k N Y 1954 P \$3

This volume is comprised of transactions of the second conference of a series of conferences on administrative medicine by a group of about 20 outstanding leaders in this field Amon, the conferees were representatives of most of the branches of medical science concerned with the administration of medical affairs.

The subtopics also discussed were main components of adminis trative medicine home care programs and the health services of the Department of Health for Scotland

The transact on of this conference serve to focus attention on the great need for improvements in the field of administrative medicine and this book should prove of interet and value to those concerned with the administration of all types of medical programs. This volume should be of great value to the graduate student who is preparing for future assignments in the field of administrative medicine.

-HUCHIS G THOMAS COL MC USA

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U S ARMED FORCES MEDICAL TOURNAL (V 1 VI N 3

ORAL HYGIENE by R ell W Bunt g D D. Sc d C II bo m d tion the roghly r i ed 283 pg with 204 ill t t n col plt L & F bg Phi d lphis, Pa. 1954 P \$550

This book is devoted to the teaching of oral health, which here en tails those clinical manifestations of the most common oral diseases and the methods by which such diseases may be prevented or treated and the duties and services performed by the dental hygienist. It is Bunting a opinion that the basic concents of preventive dentistry presented in this textbook should be of mutual benefit to both dental and dental hygrene students

This new edition of this book which has been thoroughly reorgan ized is a compilation of the experience and knowledge of nine contrib utors. It is profusely illustrated and contains 12 chapters, nine of which are followed by a bibliography. The subject matter covered includes Fundamental principles of oral hygiene, anatomy of the mouth and teeth histology of the oral structures physiology of the mouth organic and inorganic accretions on the teeth dental caries periodontal disease stomatitis oral prophylaxis role of the dental hygienist in public health dental health education and training and licensure of the den tal hygienist

That the authors had both the dental and dental hygiene student in mind at all times is evidenced by the clear and concise wording and the numerous illustrations it is the reviewer's opinion that this text will be invaluable to both dental and dental hygiene students

-HUBERT B PALMER, LL Col USAF (DC)

NUTRITIONAL FACTORS AND LIVER DISEASES Ed t d by Roy Wald M 347 pg ll t t d Th N w Y k A d my f S N Y 1954 Pric \$450

This publication describes biochemical research in experimental animals and co ordinates these findings with the results of pathologic research obtained from humans with dietary diseases of the liver As the proceedings of a conference in May 1954 it includes a valuable review of exterimental pathology and an interesting summary of the etiology and pathogenesis of curthosis and primary carcinoma of the human liver Investigations of experimental dietary diseases of the liver in North America and Europe and the work in human nutritional conditions in Africa (kwashiorkor) Latin America and Asia also are reported

This monograph would be of considerable interest to the internist specializing in liver dysfunction and to the graduate experimental biochemist. The presentation of current thought and experimental data was found to be most interesting from a definitive point of view of hepatic function. The conclusions to be drawn from this collection of research and reports indicate that more careful studies are neces sary before the true relationship between experimental and human die tary liver injury can be ascertained -WILLIAM H LEE, May, USAF (MSC)

ORAL AND FACIAL DEFORMITY by C. Kerr McNeil Ph D L. D S 127
pages illustrated Pitman Publishing Corp New York N Y 1954
Price \$5

The title of this volume implies coverage of the entire field of oral and facial deformity but the work is primarily a treatise on cleft pal ate of congenital origin. Only brief mention is made of acquired facial deformities. The volume limits its scope to the roles of the prosthetist and orthodontist and relates the author's experiences results and research in the field. The book consists mostly of case histories, which are brief sketchy and sometimes too inadequate to convey to the read of the problems involved. Although the photographs of the patients are good those of the models and prosthetic appliances often are not shown in sufficient detail to clarify the technical procedures used

The chapters concerning the historical data and etiologic factors are especially well presented. The author's success in closing palatal perforations and clefts through stimulation of the tissue by orthodontic and prosthetic measures without resorting to operation is a new procedure and warrants further investigation. His use of extra and intra oral appliances at an early age to shape the alreolar ridge is a valuable contribution to treat ent of this condition.

This volume will be of interest to those concerned with the problem of the cleft palate but will be of most value to the specialist treating patients with this defect by prosthetic means

-ROBERT B SHIRA Col. DC USA

THE BIOLOGY OF MAN by John S Hens II Ph D 440 pages illustrated.

The Blakiston Company Inc New York N Y 1954 Price \$5 50

This is an introductory college biology text which has a clearly outlined objective to present the major principles of animal biology as they apply to man. I believe the author has limited his audience unnecessarily because the book so understandably and accurately introduces the subject it should be greatly appreciated by the advanced high school student and the general public. The latter have been bom barded by much less readable and often inaccurate material

The subject is presented orderly and accurately with definitions of terms logically and clearly located. The life cycles of man and of lesser organisms are discussed from the cellular to the adult stages and man is related to all plant and animal life in a comprehensive chapter. Another sequence of chapters pertains to anatomy and to the regulation maintenance and control of man and describes how the body reacts to harmful disease agents.

The book is indexed adequately but references are few in a class room this may be overcome by supplemental reading assignments. The use of this type of book in educating and training personnel in the atmed services is highly recommended —RICHARD E. OGBORN May MC USA

ODERN TRENDS IN DERMATOLOGY (Se ond Ser) d ted by R. M. B.

Mack mna, M. D 338 p g. liu rat d. P 1 B Hoeb Inc N w Y rk
N Y 1954 P 12.

This book the second in a seties begun five years ago tepresents the combined efforts of 22 well known contributors on 17 different subjects. The object of their collaboration is to present a surmary of the more important advances in detriatology during the past five years. The subjects covered are divided into chapters on ecology in relation to detriatology critical evaluation of psychosomatic medicine in relation to dermatology cutaneous sensibility physiology and functional pathology of the skin blood factor in lipus eytheriatosus cytodiag nosis in dermatology tuberculous disease of the skin accodosis critical appraisal of nodern trends in leptosy with particular reference to advances in immunology cutent problems in cutaneous bacteriology allergy in relation to dernatology cross sensitization phenomena, heliminths and the skin with special reference to enchozer asis recent developments in the use of antibiorics cort one and ACTH in dematology and Beta ray therapy.

The text is well written and contains the best features from the articles reviewed. All of the articles are listed in the references at the end of each chapter. This work cannot be considered a text but rather a source book and as such, valuable to anyone interested in more extensive reading in any on of the subjects covered. While one may not agree entirely with the selection of subjects careful reading is sure to be repaired by stimulation of thought and interest. It is recommended primarily for detinately for detinately as the __O(N) VALTERS Comb (MO USY).

A FORMULARY FOR EXTERNAL THERAPY OF THE SKIN by Cb ter h
Faxier M D d Int H Blank Ph D 118 P 8 st Ilustra d.
Cha I C Thoma P bl be Sprigf ld 111 1954 P \$3 25

This formulary is now official throughout the Massachusetts General Hospital where it has proved adequate in all respects according to the authors. It was devised in an effort to produce a simplified formulary for topical treatment of the skin. Such drugs as calamine boric acid phenol arithistarinies and antibiotics are omitted either because they are potentially dangerous or there is inadequate proof of their efficacy or because as in the case of antibiotics they are more effective if given by routes other than topical Internal therapy in derma tology being outside the scope of the authors subject is not included in this formulary although they do not deery its importance and necessity in many conditions.

Simplicity and rationality is the keynote. Topid tap water alone is used for baths and compresses. Cleanliness of the skin is emphasized and the use of detergents (plain scap or synthet e detergents) for this purpose is stressed when not contributed. About 14 active medications are used alone or in combination in various vehicles for all skin conditions.

The authors stress the importance of the physical-physicochemical properties of the vehicles used and provide an excellent chapter with diagrams explaining their properties. Some of the vehicles contain various emulsifying and wetting agents. Complete formulas of the vehicles and the names of the manufacturers of the less well known ingredients are given. Principles of treatment are discussed and se lected references are listed at the end of each chapter.

The formulary appears to be a step in the right direction to put local dermatologic therapy on a less esoteric basis and make it more applicable for general use. Most dermatologists would agree however that the list of topical active medications used is too simplified omitting such valuable drugs as hydrocortone acetate violom, gamma isomer of hexachlorocyclohexane and others that come to mind. The book is especially recommended for the nondermatologist interested in posses sing knowledge of rational simplified therapy for skin diseases.

-VINTON HALL Comdr (MC) USN

THE PSYCHIATRIC AIDE His Part in Patient Care by Alice M Robinson, R N M S 186 pages illustrated J B Lippincott Co Philadelphia Pa 1954 Price \$3

Because of increasing emphasis on proper care of the mental patient this text for the psychiatric aide is a valuable addition to our present references on the subject. Many of the duties related to the care of mental patients cannot be classified strictly as "professional. The number of nurses trained in psychiatry is far from adequate and the well trained psychiatric aide can be used to good advantage in carrying our routine procedures and assisting in more technical responsibilities.

The material is presented in a simple easily read and understood form for both the psychiatric aide and the student nurse. Each chapter is preceded by an introductory paragraph analyzing the feelings of a psychiatric aide as he gains new experiences.

The illustrations are the weakest part of the text Many of the authors ideas could have been expressed more effectively. The appendix includes a list of references definitions of terms used in the text and a simple classification of mental illness.

-ANN M. WITCZAL, May ANC USA

THE DYNAMICS OF VIRUS AND RICKETTSIAL INFECTIONS edited by Fank W Hartman, M D Frank L. Horsfall Jr M D and John G Kidd M D 461 pages illustrated The Blakiston Co Inc New York N Y 1954 Pice \$7.50

Thirty three eminent investigators in the field of virus and rickettsial infections contributed papers to this symposium held at Henry Ford hospital in Detroit in October 1953 Customary topical boundaries based on taxonomy or host specificity were abandoned in favor of an outline based on dynamic concepts and the various agents specifical ly mentioned in the papers served essentially as experimental vehicles

Publishing the proceedings of a symposium is under any circumstances a trying task. The editors and publishers of this volume are to be congratulated for having produced an attractive permanent volume carefully proofread with well-reproduced tables charts and photomicrographs with sufficient promptness to maintain the timeliness of the material.

One of the chief objectives of the symposium according to the statement of the editors was to provide an occasion for the exchange of ideas in information between workers in different areas of the virus and rickettsial field. Another objective perhaps of greater importance was also attained because the symposium provides a suitable basis for a well-rounded concept of the biology of viruses and rickettsiae which can be stated in terms applicable to all living organisms.

The papers are divided into five groups mechanisms of virus and rickettsial infections ecology and pathogenesis mechanisms of immunity laboratory diagnosis and approaches to prophylaris and ther apy. The contributions in the section on mechanisms of infection are of particular interest especially at present because they are new and less generally known and have significant implications regarding inheritance growth errors of intermediary metabolism host invasion virulence and other problems. The papers concerning the development and use of attenuated living vaccines and the use of chemical prophy laxis and therapy are of especial interest.

Many readers may find themselves in unfamiliar territory more than once in this book but it is stimulating and although not comprehensive provides insight into current problems in the important field of virus and richerisal diseases—HOHN K. SPIZZ-MGEL Mit. MC USA

THE SCOURGE OF THE SWASTIKA by Lo d Rus IL 259 page Philo oph cal L brary h w York N Y 1954 P \$4 50

This book is an account of many of the German war crimes compiled from evidence given and documents produced at various war-crime trials and from statements of eye witnesses Lord Russell as Deputy Judge Advocate General British Army of the Rhine was a participant in many of the trials and investigations and had access to the records in most of the others. The importance which this subject has for the author is attested by his decision to resign on 8 August 1954 as Assistant Judge Advocate General of the Forces in London rather than drop publication of the hook.

The ill treatment and murder of prisoners and populace of occupied countries slave labor concentration camps and the special treatment accorded Jews are described in this book Under these headings we are told how as Su Hartley Shawcross put it on the lowest commission twelve million men women and children were done to death

Not in battle not in passion but in the cold calculated deliberate attempt to destroy nations and races to disintegrate the traditions the institutions and the very existence of free and ancient States. Twelve million murders murders conducted like some mass production industry.

This appears to be a conservative factual account of the atrocities we have all come to associate with the Nazi regime. There are 28 illustrations with an adequate index and bibliography.

-MARION E ROUDEBUSII Ce ((NC) US

GUIDE FOR SAFETY IN THE CHEMICAL LABORATORY Prepared by and published for The General Safety Commutee of the Vanufacturing Chemists Association Inc. Washington D.C. 234 pages illustrated 39 plates D Van Nostrand Co. Inc. New York N. Y. 1954 Price \$4.25

This manual is compiled primarily for college university and industrial chemical laboratory staff members student bodies and coworkers however there are several chapters which apply to high schools and elementary technical training schools where chemical laboratories are in existence or where chemicals may be handled

The book is concise Mandatory procedures are set down using the word "must while desirable procedures are set down using the word should". This makes it easy for the reader to determine where some leeway in procedures is acceptable. The material is very well organized which permits quick reference to discussion of particula, problems or hazards.

Excellent photographs of some of the most desirable features of modern industrial chemical laboratories with clear detail photographs showing proper methods of some operations are included Adequate references are given in a separate section. I believe it would be desirable to include reference to the series of handbooks published by the National Bureau of Standards on the recommendations of the National Committee on Radiation Protection. These are a very desirable addition to the excellent chapter on radiation safety.

-JOHN S GEIL, Army Chernical Center

THE TREATMENT OF THE ALCOHOLIC, by F itz Aant M D 130 pages Charles C Thomas Publisher Springfield Ill. 1954 Price 33 50

Nothing is added to the knowledge of chionic alcoholism nor its treatment by this small volume. However the author a well known psychiatrist has given in a brief and concise form a worth-while summary of some of the problems confronting the therapist in alcohol ism. The book is directed toward lay readers although the physician and especially the general practitioner may well find it to be a useful guide in treatment. The author presents some of his personal viewpoints as regards treatment and the chapter emittled. Psychotherapy is of especial value.—CHARLES T. BROWN II. Gol. MC USA.

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LECTURES ON THE SCIENTIFIC BASIS OF MEDICINE V 1 m II 1952 53 by Bth Ptgradt MdalFdtu Unity of Lodon
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SHLdw 1 1954 Dtrbtd USA by Jh d G ff I c. N w Y k N Y P

This volume is the second in a series devoted to presenting a review of the most recent advances in basic science in med cine in lec ture form. The book is well printed but the placing of all the cuts in a section at the end of the book somewh timpairs its usefulness

The current series of lectures is well selected ind is guaranteed to stimulate the thinking of its re ders. Because the earliest lecture was delivered in October 1952 and the most recent in February 1953 the data are recent enough to be news to most readers who do not keep in close touch with the literature of the basic sciences. Each of the lectures h s been delivered by a recognized authority on the subject and is complete in itself with adequate bibliographic references provided

The book is recommended for any busy physician who is interested in keeping abreast of progress in fundamental research and in stimu lat ne himself to thought about improvement in medical tractice. The book should be of particular interest to students preparing to appear before specialty bo rds because it presents in easily assimilable form basic data which is of import nce to every specialty in medicine -RYLEA RADKE Col. MC USA

PERIODONTIA Cl I P tholgy d T to t of th P od tal T by Edg D C ldg MS D D S d My d K H MS D D S 2d ed t 384 pag 424 ll tr t on 250 f gut d 2 l pla L & F bg Ph lad lph P 1954 P

This concise text w written principally for dental students and general practitioners of dentistry as a ref renc to the fundamentals and the principles of treatment of p riodontal disturbances. The book is well organized being divided into four m jor sections of 14 chap ters prevention and classification of periodontal diseases treatment of infl mmatory changes in the gingival and periodontal tissue treat ment of retrogressive chinges in the periodontal tissues and correct tion focclusal disharm ny nd care of the oral tissues

The illustrations are excellent and the c ptions are concise a d clear in meaning. The general format is conductive to e se of reading The book is not encyclopedic in scope and is obviously intended pri marily as a t ach ne text and not as a reference book

In the di cussion of acute necrotizing gingivitis the r commendations for the use of caustics seems questionable and insufficient importance is attached to the early debr dement of the mouth in the treatment program The discuss on of the surgical method of pocket elimin t on limited with reference only to the technic of gingivectomy

The volume is a valuable addition to periodontal literature

THE CARE OF THE AGED (GERIATRICS) by Malford W Theulis M D
6th edition 832 pages with 155 illustrations The C. V Mosby Co
St Louis No. 1954 Price \$15

This is the sixth edition of a general text covering all phases of medical management of the aged. In this day of increased longevity one is a little taken aback by the statement that the practice of geri attics begins when the patient reaches the age of 40.

Perhaps many sections could have been brought a bit more up-to-date. For example, liver extract is discussed in the management of Addisonian perincious anemia. Terramycin is the most recent antiboric found discussed in the text. In the management of hyperthyroidism no reference is made of 1th used as a diagnostic tool and particularly as it is used in the therapeutic management of the aged. Concurrently conventional chemotherapy is omitted from the management of pul monary tuberculosis. Rather the author discusses somewhat extensive by the use of collapse therapy.

In the management of syphilis 720 mg (1 200 000 units) of peni cillin every three days for three or four injections is recommended Many would believe that this is inadequate antisyphilitic therapy. No reference is found to the use of the Treponema mobilization test when syphilis is suspected While benemid is mentioned in chronic gour therapy no reference is made to its use in the acute attack. The advice for the elderly to restrict periods of reading to only five minutes and then to rest would seem to be a little impractical. Considerable discussion is given to foci of infection perhaps somewhat our of proportion to the conventional thinking.

The author does not urge the use of oxygen early in myocardial infarction. In general the discussion on nursing care in geriatrics is excellent. The instructions to physicians in the avoidance of myocardial infarction are excellent for everyone in the profession.

While in general the author fulfills his objective it is believed that the reader would not feel satisfied by the newness of many types of therapeutic management The book would perhaps fulfill a need for a great many physicians in general practice

-FRANCIS & PRUITT Col NC, USA

A MANUAL OF OTOLOGY RHINOLOGY AND LARYNGOLOGY by Howard
Cha les Ball nge M D and John J Ballenger M D 4th edition
enlarged and thoroughly revised 365 pages 136 illustrations and 3
color plates Lea & Febiger Philadelphia Pa 1954 Price \$6

The fourth edition of this well known manual is well organized into sections referable to the nose phatyux laryux and ear It is well indexed so that specific subjects are easily located making the book an easy to use reference manual The material is written in a style conducive to easy and pleasurable reading Considering the brevity of the book much information is available.

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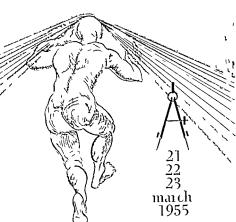
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Monthly Message

I wish to pay tribute to an intimate personal friend of almost 30 years Dr Isidor S Ravdin who was recently appointed by the President as the first major general in the Army Medical Reserve a promotion and reward richly deserved This promotion ont only paid personal tribute to General Ravdin but through him recognized the increased stature of the Medical Reserve of this nation The appointment from the President was read to Dr Ravdin his wife daughter and her husband and a large group of officers and friends by General George Armstrong in his office on 15 February 1955

In January 1942 while visiting Dr Ravdin in Philadelphia and casting about for my own role in the war he took me to one of the organization meetings at the 20th General Hospital following which I returned to New York with my mind made up and shortly thereafter was asked to help form the 9th Evacuation Hospital from the Roosevelt Hospital in New York Dr Raydin was at first chief of surgery and later commanding officer of the 20th General Hospital which served for many months with great dis tinction in the China Burma India Theater and during this period he received his promotion to brigadier general for out standing services in the theater not only to his fellow Americans but to the entire allied group Ever since his return from the war he has continued his active interest as one of the consultants to the Surgeon General of the Army and as a member of the Armed Forces Medical Policy Council and more recently a member of the Council of the Assistant Secretary of Defense (Health and Medical) where his advice and enthusiasm have been invaluable Last autumn he was elected chairman of the Board of Regents of the American College of Surgeons and as some of you may know he has been honored in his own home city Philadelphia by the University of Pennsylvania with a new surgical building the I S Raydin Institute

Those whose privilege it is to know Dr Ravdin and work with him will recognize at once the apt description of him which was the title of an article about him in the University of Pennsylvania *!delcal Bulletin December 1954 And Stab My Spirit Broad Awake "a quotation from The Celestial Surgoon" by Robert Louis Stevenson The medical services not only of the Army but of all the armed forces are to be congratulated by this public recognition of the value of General Ravdin to us all

TRANK B BERRY M D
Assista t Sec ta y of Def nse
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Adm rai Hagan Appoint d Navy Surgeon Gene al
Official Deco at ons
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Vet no y Corp Off cers Cert fi d by Specialty Boards
Deaths
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A Message From the A. H. A
The Medic I Office Wites
BOOKS
Reviews of Recent Books
New Book Received

A 15 item questionnaire was mimeographed for distribution (fig 1) In interviews with the commanding officer of each ship the objectives of the survey were discussed and his co-oper

MOTION SICKNESS QUESTIONNAIRE U S S
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ation enlisted. The questionnaires were then distributed via the division and petty officers usually at morning quarters. The forms were collected in similar fashion during the next few days. The questionnaires were returned to the investigator ouring the third and fourth weeks of January 1954. All the forms were tabu lated by the same person. None was rejected on the grounds of unreliability or apparent bias. In rare cases, it was apparent that a small group of men working and living in the same area had collaborated on identical answers. However, the total number of ambiguous, facetious, or obviously hostile questionnaires was gratifyingly low (about two percent in all), especially considering the wide latitude of comment permitted by the method Implicit in the great majority of comments was a spirit of active interest and co-operation.

Of 1,100 men assigned to the Squadron, questionnaires were returned by 699, or 63 percent. At any given time, a significant proportion of a ship's assigned complement can be expected to be on leave or in training elsewhere Aside from avoiding the Christmas leave period, the investigator took no reasures to ensure a high response rate

By individual ships, the lowest rate of response was 52 percent of the assigned complement, the highest, 86 percent. In the latter case, the forms were returned in exact alphabetical order, and it was apparent that vigorous efforts had been directed toward se curing a questionnaire from every man aboard. This vigor was negatively reflected by a comparative increase in the number of omissions and inconsistencies in the papers received. However, the exceptionally large sample from this ship was not characterized by any significant variation from the reported incidence of seasickness in the Squadron as a whole. This would suggest that the sample of 699 is a relatively unbiased reflection of the total population of the Squadron.

In regard to sea cickness, the questionnaire offered a choice of four answers "never," "occasionally," "often," or "almost always" incidence of seasickness is recorded in terms of these four classes "Almost always" seasick is considered synonymous with "chronic" seasickness

1 INCIDENCE OF SEASICKNESS

Of the 699 men returning questionnaires, 12 7 percent stated that they were habitually seasich, while 38 7 percent never were seasich (table 1) Among the many factors which must be considered in evaluating this frequency of seasichness are age of subject, sea experience, past history of motion sickness, position of borth on board ship, and the patient's own opinion as to caus ative or aggravating factors. These factors will be discussed separately.

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FACTORS IN PRODUCTION OF SEASICKNESS

Age and Seasickness. Twenty two years was the median age for the Squadron About 80 percent of the men were less than 26 year old in the men under 26 there was a slight and statistically insignificant trend favoring dirinished chronicity of seasickness as the men approached the age of 20

TABLE 1 1 cid of saik s f ted m g 699 m on

Cat gory	N mb	P
N ik	268	38 7
Occas onally	268	38 7
Oft	68	98
Almost lw y	88	12 7
N t td	7	0 1
T tal	699	100 0

TABLE 2 Ag and cid of as k as codd 692 qu tomman

`) Ag	\ mbe	N	k	Almo t	1way
Ì	, Ag	pl	N mbe	Pct	N mbe	P t
	18 5 26-50	570 122	199 66	35 44	80 6	14 5

Increased experience at sea was a variable not excluded from the data in table ° Of necessity accumulation of sea experience was dependent upon advancing age at least in the 18- through °5 year group was compared with that occurring in the 18- through 25 year group was compared with that occurring in men from °6 to 50 years of age. The incidence of chronicity dropped by more than 50 percent, Selection however played a part in the change noted after the age of 26 Chronically seasick young men may not choose to grow old in the Navy

Sea Experience Only 20 percent of the men in the Squadron had had less than 12 months sea duty however this group accounted for one third of the men reporting chronic seasickness. Table 3 presents the situation of those men under 26 who vere in their first and second tours of sea duty. A decrease in chronic seasickness elemed to be associated with sea experience of 12 months or more

Past History of Motion Sickness Table 4 shows the incidence of seasickness in men who as children or adults had been carsick, arisch, or both Also indicated is the incidence of seasickness among those who had not experienced other types of motion sickness Those who had no air experience are included in the latter class

TABLE 3	Length of sea duty and incidence of seasickness in men	
	18 th ough 25 years of age	

Duration of sea duty		ver sick	Almost	always sick	Number
(years)	Number	Percent	Number	Percent	duty class
Less than 1	39	26	32	21	149
1 to 2	52	37	12	9	139
2 to 3	93	38	33	13	247
Total	184		77		535

The sample was selected to minimize two extraneous factors age and sea dut. With respect to age, men in their late 20's are said to show increased resistance to severe seasickness 'Regarding nautical experience, there was an apparent alteration in the incidence of seasickness during the first year of duty affoat. Accordingly the sample in table 4 includes only those men under 26 with at least 12 months' sea experience

The class of men with a history of car sickness or airsickness included less than one third of the men in the sample Within this class, however, were 70 percent of the chronically seasick men. Of the men in this class, less than one in 10 was immune to sickness at sea. On the other hand, when the men who had never experienced car or airsickness were considered, about half were completely unaffected by seasickness.

Seasickness and Berthing Compartments Of the men in the survey 505 were berthed in the three after living compartments of the ships. Among the three compartments there was no significant variation with respect to the numbers of men "never," occasionally " "often," or "almost always" seasick

The pooled incidence of chronic seasickness in the three after compartments was compared with that reported in the forward berthing compartment. In the forward compartment, the incidence of chronic seasickness was significantly higher, although this compartment was roughly the same distance forward from the center of the ship as the three other living compartments (con

sidered as a unit) were aft. However young nonrated men in the deck division were generally assigned to the forward berthing compartment. The after compartments were populated largely by rated men and strikers with greater sea experience. Already noted is the effect of accumulated sea duty upon reported incidence of chronic seasickness Accordingly the high incidence of chronic seasickness in the forward compartment was probably due in nart to selection *

Analysis of the data with respect to place of work on the ship was not considered profitable due to small samples and numerous variables However the frequency of adverse comments from clo e restricted areas such as Combat Information Center and Radio Central was impressive

Patients Evaluation of Factors Participants in the survey were requested to comment concerning those attributes of their living quarters or place of work believed to contribute to their tendency to become seasick. The attributes and the number of persons noting each are recorded in table 5 (The following ex amples were mentioned in the question itself closed space, odors lack of fresh air smoking vibration excessive heat or humidity and others appearing ill) Table 5 may throw some light on which aspects of creature comfort are considered important by shipboard personnel though they may not necessarily con tribute to seasickness Particularly significant, however is the fact that these items are by definition, those which personnel aboard the ships consciously link with seasickness

This part of the report may be summarized as follows. A ques tionnaire regarding seasickness was returned by 699 of 1 100 men in a destroyer escort squadron About one of every eight was almost always seasich and only about 3 percent claim ed they never were seasick. The others about half the total group were often" or occasionally sick This finding was related to age years of sea experience and past history of motion experience in that a higher incidence of seasickness apparently occurred in younger men with less sea experience and a history of motion sickness in the past.

II PREDISPOSING FACTORS

Chinn' has delineated the significant differences between civilian and military motion sickness and their implications In civilian medicine motion sickness is usually a short-term inconvenience in the military however the patient is a hazard to himself to the effectiveness of training operations and to the success of the command operation This is true of any branch of

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TABLE 4 Seastchness and bistory of other motion sickness in men 20 through 25 years of age with at least 12 months sea duty

			1	Incidence of seasickness	seasicknes				_
		į							
History	Ne sca	Never seasick	Occas	Occasionally seasick	Of	Often seasick	Almost	Almost always seasick	Number of men
	Number	Percent	Number	Number Percent Number Percent Number Percent	Number	Percent	Number	Percent	
Aimitair and car	~	٠	42	40	23	22	34	33	104
Deny air and car sickness	139	ű	105	39	14	<u>~</u>	14	'n	272
Total									376

military service in which the performance of duty involves exposure to conditions productive of motion sickness however the Lignificance of motion sickness in the naval service is particularly striking Unlike the airman, for example the sailor does not necessarily secure respite from motion in a matter of hours In addition to being his place of work the ship is virtually the seaman s home for weeks and months

TABLE 5 Co tr b t ry factor s as kn comp l d f m 385 a sw t qu tso No. 15 q t nat

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D f ne	Type fi to	Specif to d		Ttal
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m da R w d pa t d ny m 2 52 T mp m E h 23 23 43 Sh p m V'r too 17 17 Food C ram f od d nng gh w h 25 52 17 T m n n darnag mb 1 1 1 1 4 M lla ou Oh ppe mg ll m mg 14 14 15 10 16 16 17 I m n n n n n n n n n n n n n n n n n n	V I t	L k ff sh u	114	114
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### ### ### #### #####################	Shp ma	V br tion	17	17
f to Thinking box km 2 N is	Food	gr y food p k saus g Sh p m ti dunng ting	1	4
T al 385		Thinking bou kn N is L k f l p H ge Ge er l tan other	2 3 2 1 1	25
	T al	1		385

The development of seasickness is associated with a logical progression of well known signs Subjective visceral uneasiness is closely followed by generalized sweating and pronounced facial pallor. Nausea proceeds apace, and frank vomiting ultimately occurs. Vomiting is a convenient endpoint for certain motion sickness studies. It is, however, too rigid a measure of disability for the crew aboard a highly organized fighting ship wherein continuing individual initiative is of vital importance. Very early in the progress of the motion sickness syndrome there occurs a subjective change that is of far greater significance. This change consists of an alteration from a positive to a decided negative attifude.

For the moment, conjure up a patrol vessel bobbing on the Atlanto frontier It is nominally peacetime A radarman striker, mesmerized by the abundant tracery of his scope, awaits an en emy he really doesn t expect to find ("Intense interest may hold symptoms of seasickness in abeyance") The radarman is vaguely uneasy ("In the Navy mild forms of seasickness are usually ignored "1) Finally, the watch is relieved The hypothetical striker picks up his training manual ("Reading, is usually difficult and ambitious reading programs planned for a trip usually are never carried out.") His last cigarette tastes even worse than the one before He lays aside the manual, goes below, and "flakes out"*

Interest in work, study for advancement, and reconstructive enjoyment of leisure hours are the results of gratuitous productive endeavor Individual endeavor beyond the narrow limits of prescription is the life s blood of a dynamic organization. This vital fluid diverted in the earliest phases of seasickness, courses but feebly (if at all) throughout the hours and days of distress at sea.

INDIVIDUAL SUSCEPTIBILITY

Individual variation in susceptibility to seasickness may conveniently be considered in three classes

- 1 Those who are never subject to seasickness however adverse the conditions encountered aboard escort type vessels in peacetime
 - 2 Those subject to seasickness occasionally or often.
- 3 Those who invariably become seasick with the mildest provocation

Se koe incidence amo 8 mids men ad strikers a t dar ne s 23 p to t, occa onally 39 percent fiten 10 p to t, lmo t always, 28 p tocest e mpar d to 39 39 10 and 12 perce t, te pecti ly amo g all crewm f destr y escort squadron.

The present data (based on returned questionnaires) indicate that about 40 percent of young men are in class 1 those who are never seasick. There may be no sharp definition between class 1 and class 2 Expenenced investigators consider it likely that almost all persons can be made sick if the kind, intensity and duration of motion is adequate 1 Overall class 2 includes about 50 nercent of the men in the under 26 age group

Class 3 chronic seasickness is the smallest of the three divisions. Here are found the remaining 10 percent of the population Class 3 may be considered as having two divisions each of about equal size. One is continuous with class 2. The other comprises those men who most likely will remain seasick to some degree throughout the entire span of their sea dut, no matter how mild the provocation or how adequate the therepy. Two to six men in 100 may fall into this group although the small size of the present sample permits no more than a calculated guess It is every likely that these men will also have a history of car sickness as a child or of car or airsickness as adults.

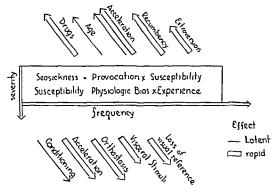
In the group as a whole therefore susceptibility to seasick ness may be regarded as a spectrum Incidence of seasickness will vary as the preduct of provocative stimuli and individual susceptibility in the formula however susceptibility is not a constant it is to a considerable degree, a function of the present and mast experience of each man

Figure 2 a schematic interpretation of this hypothesis presents those factors considered to influence movement from onclass of seasickness to another. These factors fall into two groups (1) those effecting changes in a matter of minutes or hours and (2) those producing results over a period of months or years. Each factor may further be classified according to whether it bears a negative or positive value with respect to aggravation of motion sixteness.

ENVIRONMENTAL FACTORS IN MOTION SICKNESS

The same qua non of motion sickness is acceleration. This is not only the chief stimulus in the motion sickness equation but is also a prime factor altering individual susceptibility.

Not all types of acceleration provoke the characteristic response of seasickness. With respect to linear versus angular acceleration it appears that the linear (vertical) movements of a ship are the most distressing. According to the type of sea acting upon a vessel the vertical movements vary greatly For convenience however movement of a given part of a ship may be considered in terms of a simple sine wave recognizing that this wave is actually a complex resulting from the varying in fluences of pitch, roll, and scend (heave) The attributes of the wave are period and amplitude. The period is largely determined by the ship's hull and loading characteristics. It tends to be constant in a given class of military vessel. Because the period is fixed, the amplitude (violence) of acceleration is usually determined by the actual pitch and roll of the ship (in degrees), and by the scend (in feet)



Figu e 2. Factors influencing movement of men from one class of seasickness to another

Assuming that linear acceleration is proportional to the distance from the ship s geometric center, the greater keel and beam lengths of the transports might be expected to result in larger values of acceleration in remote parts of the ship, as opposed to those occurring in the destroyer escort. This expectation, however, is negated by the observation that the frequency of the destroyer escort's acceleration wave approaches twice that found in the transports Accordingly, there is a proportional increase in acceleration amplitude in a given part of the smaller ship

Although no experimental data are available on this point, it is believed that scend (vertical movement of the entire ship) is an additional factor markedly contributing to seasickness in the escort vessel Because of its relatively short length (300 feet),

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this ship has a tendency to skid down the back of a passing wave enter the trough, and then rise in entirety to the crest of the next wave On the other hand a 600-foot transport similarly heading into the sea tends to span from crest to crest, there is proportionately less vertical motion of the ship's center of gravity

Based on the foregoing considerations the thesis is submitted that the linear acceleration in any part of a destroyer escort in mild seas approaches or exceeds that occurring in 20 000 ton transports during rough weather Accordingly conditions provoking seasickness are likely to obtain with far greater frequency aboard destroyer escort-type vessels than is the case on larger ships

A paradoxical phenomenon is reported by several of the subsects in the survey as well as by others with extensive service aboard destroyers and escorts Although these men are frequently ill during heavy swells and moderate seas they report an actual decrease in their propensity to seasickness sometimes amounting to complete immunity in extremely rough weather when green water is taken over the bridge and rolls are frequently of 30 degrees or more An explanation for this incongruous reaction may hinge on the following observation Standing waves of rela tively high frequency (several per second) often occur in the mast and the hull itself under extremely turbulent conditions These waves are heard and felt as ominous shudders Though quickly damped that they should occur at all implies the presence of extremely strong, high frequency components in the surrounding redium the sea Alexander cited by Handford and others sug gests that the period of acceleration rather than its violence (amplitude) constitutes the effective motion sickness stimulus Periods of several seconds or more may be the most provocative The paradox cited lends support to this thesis The moderately heavy slow sinusoidal ground swell may be more likely to incapacitate the susceptibles than will a much stronger wave form that is broken up by high frequency components

In surmary then the shape and period of the acceleration wave may be more significant than its actual violence. The increased tendency for seasickness aboard the smaller vessel is probably not as much related to its extreme pitch and roll values per se as to its short length and small inertia. The latter permit significant periodic linear acceleration to occur under relatively mild sea conditions

INDIVIDUAL FACTORS IN MOTION SICKNESS

Having examined certain attributes of the basic stimulus let us turn to other factors which rapidly influence susceptibility to motion sickness Of these, change in posture is the most striking It is traditional to expect some moderation of seasickness upon lying down, and to anticipate a recurrence upon again assuming the upright posture The premise that this phenomenon is more than coincidental is supported by experimental data and physiclogic considerations Those investigating seasickness in troops report a striking increase in mal de mer immediately after reveille 4 Laboratory studies wherein motion sickness is induced by swinging show that crthostatic human pendula are distinctly more susceptible to swing induced sickness than are recumbent persons Physiologically, it is believed that the macula of the utricle of the inner ear is the prime receptor for linear accel eration stimuli In the upright posture, the macular otolith rests on the macular cilia In the recumbent position, the otolith ap proaches the same horizontal plane as the macula As a result in the later posture the otolith is much less strategically situ ated for effective agitation of the macular cilia in response to vertical acceleration 2 Restoration of proprioceptive righting reflexes on arising may also be a factor contributing to motion sickness 3

Many persons susceptible to seasickness report that smoking and the drinking of coffee, particularly in the absence of food, are definite contributory factors. Visceral stimuli, especially the contractions or secretions of an empty stomach, may be considered to have a positive tendency to aggravate seasickness. In this category are included noxious odors and the smell of food. When loading diesel oil aboard the escort vessels under consideration the fume-laden air displaced from the tanks is vented into the living compartments. Fumes similarly escape during daily soundings of the tanks. With respect to food odors, numer ous men may be berthed in a compartment that is also the crew's messing area and directly adjacent to the steam table.

Enclosed space rates high on the list of factors believed to contribute to sickness at sea. Although the leading question posed in the survey may have given a spuriously high response, loss of visual contact with static references, such as the horizon, is known to enhance motion sickness Blindfolded persons in swing tests, for example, show an increased incidence of illness ¹

If considered solely in regard to amelioration of seasickness aboard small ships, improved habitability is worthy of productive investigation. Heat and inadequate ventilation go hand in hand with enclosed space on the destroyer escort especially when the ship "buttons up" for rough weather. The situation is aggravated further during general quarters. Wen are confined for long periods in small compartments, particularly the radio room com-

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bat information center and the code room. In none of these is there visual contact with the horizon in all of them con siderable heat from electrical apparatus is added to that dis sinated by the human occupants Conditions favoring seasickness are at their zenith vet these spaces are precisely those most critical with respect to the effective military operation of the ship

PSYCHIC FACTORS IN MOTION SICKNESS

In the promotion of seasickness the part played by psychic factors is disputed. One view holds that seasickness is all in the mind This opinion is invariably volunteered by those who have never been seasick Although the inevitable sea story may indicate that the narrator has a truly impressive resistance to motion sickness the anecdotal approach contributes little to one s general understanding of the subject.

At the other extreme in the opinion poll is a young man who had been excluded from the society of his mates because of certain offensive personality traits le had six months of sea duty and had been severely all much of the tame. According to this wouth My seasickness is caused by my lack of balance when the ship is rolling and pitching My lack of balance comes from the fact that I have flat feet and bad legs

Chinn believed that the importance of psychic influence had been overestimated. Nonetheless I have been impressed by a tendency for immature dependent, highly suggestable men to appear among those affected most dramatically by motion Under stress such persons exhibit a proclivity for explaining inadequacies of personality in terms of specific somatic defects. It was of interest then to find that, using a questionnaire technic, the Naval Medical Research Institute found no evidence to in dicate a correlation between general psychosomatic complaints and susceptibility to seasickness. However, the Institute consid ered such a questionnaire useful in screening out persons who would be severely affected by seasickness

PROLONGED PSYCHIC CONDITIONING

Although the six ships of Escort Squadron Fourteen are super ficially alike each has a definite personality. This personality is the composite of minor structural and functional differences manifest to the observer through visual olfactory auditory and vibratory stimuli Especially pervasive aboard a diesel ship are noise and vibration. One rapidly becomes accustomed to these continuous sensor, intrusions but their existence is rendered none the less real. For months on end, the ship sunhabitants are steened in this milieu of sensory stimuli

It appears reasonable that a person who is subject to seasick ness in such an environment may be conditioned rather quickly to associate the environment itself with the discomfort and depres sion of motion sickness Seasickness is such a gripping malady. and the external stimuli aboard ship so ubiquitous, that it does not necessarily require an abnormal degree of intrinsic sugges tibility for a definite lowering of the threshold of motion sickness to occur This is especially true when the patient's discomfort is colored with hopeless pessimism engendered by his ignorance of the self ameliorating characteristics of his distressing malady. and accentuated through the unsympathetic attitude of his colleagues and superiors This should not be construed as a recom mendation that all seasick men be put to bed and tenderly re garded as sensitive plants A few persons otherwise useful citizens, seem to disintegrate under the initial impact of severe motion sickness Occasionally it is prudent to indicate to such a man the advantage that lies in directing his attention toward areas external to his own soma as soon as possible Toward this end, administrative firmness may sometimes have a higher per sussive value than the medical officer's advice and pills

The operation of psychic conditioning has a marked tendency to move a moderately susceptible person into a class characterized by an increased seventy of seasickness Once there, further conditioning tends to "freeze" him Despite adequate motivation, the man becomes genuinely resistant to all efforts aimed at dislodging him from the chronically seasick class. An appreciation of the role of conditioning would tend to illuminate the incongruous plight of the man who "heaves whenever they light off the main engines". The influence of conditioning has been neglected though it has clear medical implications barly finding of cases and vigorous and enlightened therapy with drugs may effect a significant reduction in the ultimate number of chronically seasick seamen

FACTORS RAPIDLY REDUCING MOTION SICKNESS

The average person adapts to motion with remarkable celer ity ¹ *Numerous men report that they are seasick only during the first two days at sea Occasionally the discomfort passes in a matter of hours. An interlude of a week end ashore usually destroys such adaptation and the next few days at sea are again uncomfortable. The severity of illness and the presence or absence of vomiting do not appear uniformly related to adaptability. One man may never vomit, yet will remain uncomfortable for a week or more at sea. Another may comit on the first day and be completely free from symptoms thereafter.

It appears that the labyrinthine receptors filter out, become fatigued or otherwise reject periodic linear acceleration of a

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pecific frequency upon continued exposure It has been previously noted that certain men who are commonly seasick develop resistance under unusually tirbulent conditions. It may be that periodic acceleration above a critical point of violence is associated with the development of more rapid saturation or resistance of the linear receptors.

The ataxia of the (sober) seafarer on dry land is legendary. In susceptible persons who become more or less adapted to acceleration a remarkable seasation of intermittent levitation while sitting ashore is reported during the initial days following a prolonged and rough voyage. Perhaps this phenomenon is analogous to the past pointing noted in Bárány, chair experiments or to the after image associated with brilliant retinal stimulation.

The pronounced effect of recumbency in reducing motion sick ness has been noted and has definite practical applications. First and when not incompatible with ship s work, intermittent recumbency is a valuable prophylactic against seasickness. Second it is particularly useful in association with drug therapy. The administration of antiseasickness drugs before getting under way is desirable but overemphasized. In the person already sick who has neglected drug prophylaxis lying down for 60 to 90 minutes after medication frequently enables him to absorb the preparation and subsequently return to work with diminishing discomfort. Similarly a stiff dose of dimenhydrinate (dramamine) also a u eful seedative in this condition before retring may result in a day of well being following a day of missery

Aboard ship the commissary and operating departments frequently differ regarding the question of food for men standing night watch Many men report the value of food as a prophylactic against seasickness. Some report motion sickness only upon arising for mid- or moming watches. In view of the combined influences of visceral stimuli and change in position in such situations food of some sort (in addition to the time-honored coffee) for men standing night watch deserves consideration

OTHER FACTORS REDUCING MOTION SICKNESS

Far more significant than age is the benigh influence of experience on the reported incidence of chronic seasicknes. When who are seasick in their first months afloat may reasonably look forward to diminishing disability during their first tout of sea duty. In acquiring resistance to acceleration sickness it is probable that adaptation plays a more effective role than does the process of aging

Position within the ship is generally thought to influence motion sickness. The evidence that the basis for this belief is

more than apocryphal is not convincing In one study, Chinn and others' showed that a definite decrease in vomiting occurred among men quartered near the center of a troopship In a similar study by the same investigators however no correlation of sick ness with berth could be shown 'In explanation of the latter findings, it was aptly noted that the subjects spent relatively little time in their 'living' compartments except when recumbent and highly resistant to rotion sickness

Aboard a destroyer escort, change in berthing compartment to inhibit seasickness is of limited practical value Space is a premium item. The amidship spaces are devoted to heavy machin ery Moreover, in compartments having relatively homogeneous populations, distance from the center of the ship is not shown to be correlated with an alteration in the incidence of seasickness Finally, in peacetime the assigned berthing compartment is a matter of convenience largely determined by the division in which each man works Nonetheless, the wisdom of berthing many of the younger, mexperienced deckhands in the forward messhall is questionable Here they are exposed to food odors, humidity, and excessive invasion of their limited personal privacy Moving out of the messhall however is considered by some a privilege associated with advance in grade Wholesale alteration of the population of this compartment must be considered in the light of possible adverse effects upon morale

The marked correlation between chronic seasickness and his tory of other motion sickness (table 4) raises the question of screening men in regard to suitability for sea duty Prediction on the basis of history alone however, would have salient inaccuracies leading to unwarranted wasting of manpower

III ASPECTS OF THERAPY

Three major recommendations are particularly of medical con cem First, specific education of the squadron redical officer is necessary if he is to meet the challenge of seasickness intel ligently. Although rarely appearing on standard reports, this illness may in a single day, affect up to 50 percent of the men within the medical officer s area of responsibility.

The physician has insignificant bibliographic facilities aboard the smaller ships. The application of information and experience acquired by chance and osmosis comes woefully late in the physicians relatively brief span of sea duty. Between application and results is a further unfortunate period of delay

Valuable data are available data painstakingly prepared by military agencies for military use. It is distribution that is deficient. Deserving of consideration is the compiling of a bulle486

tin concerning the management of motion sickness to be specif trially adapted for use by medical representatives affoat. The bulletin should be current, and it must be realistic. Toward these ends, information assembled by a central agency might be edited by the force medical officer in consultation with his men affort.

The program of education must go farther than the unit medical officer to be effective, it must pervade the grass roots -the individual hospitalman The need for enlightenment in regard to attitude and pharmacology is appallingly great. A hospitalman who summarizes his approach by saying I have no patience with those (seasick) guys is of negative assistance to the man genuinely seeking advice

With respect to pharmacology at a shore dispensary in recent months dimenhydrinate was dispensed with the homeonathic Take 1/2 tablet three times a day " Accordingly the edmonstron second major recommendation is a corollary of the first. Secure rational use of existing drugs and improved control of seasick ness will follow Our data indicate that practices of prophylactic medication current in the Squadron are inadequate in regard to the variety of agents available but not used in the dose of the agent used in the number of susceptible persons brought under treatment, and in the records maintained on those treated This sweep ing indictment reflects an unfortunate hiatus between that which the right hand of military medicine knows and that which the left hand door

USE OF DRUGS ABOARD SHIP

As Chinn's has emphasized, the common belief that only a small percentage of persons are susceptible to motion is entirely false " The majority of men in Escort Squadron Fourteen had been sessick at one time or another

The survey results have been concerned entirely with the reported incidence of seasickness. The questionnaire did not attempt to evaluate the seventy of illness It is of interest how ever that 30 percent of the men occasionally seasick were sufficiently ill to try dimenhydrinate at least once Of these some allegedly had taken as many as 10 tablets per day Of the men who considered themselves often seasick 60 percent had also been moved to try this drug. Moreover among those often ill were men known to be prostrated by seasickness in the north ern operating areas

Until January 1954 dimenhydrinate was the only agent dis pensed in the Squadron for the control of seasickness For the Squadron as a whole 83 percent of the men subject to chronic seasickness stated that they had received this drug at one time or another Sixty percent of those who were often seasick had also used it. The median dose of dimenhydrinate was four tablets (200 mg) per day

Aboard the U S S Able, interest in the prevention of seasichness was high Through the co-operation of the hospitalman, and sparked by the genial enthusiasm of individual line officers, an active program of dimenhydinate therapy existed Aboard this ship, the median dose was eight tablets per day (400 mg.) All personnel subject to chronic seasickness received dimenhydinate Of the six additional men who were "often" sick, all but one received treatment.

Aboard the U S S Baker, in contrast, dimenhydrinate enjoyed a general reputation for being ineffective and undesirable or so the ship's hospitalman alleged. It is of interest that one third of the personnel subject to chronic seasickness had not had dimen hydrinate. Of the men who were "often" ill, two thirds were similarly untreated.

There is definite evidence that antiseasickness preparations produce adverse effects on psychomotor test scores, the decrements in test scores tend to agree with the protective capacity of the drug 'Drowsiness and other side effects are frequently noted (In fact, "drowsiness" is rather a euphemism "narcolepsy" is for some persons, more apt.) However, no quantitative data have been received concerning the adverse effects of seasickness per se These effects are doubtless severe It is this observer s view that the side effects of carefully administered therapy are by far the lesser evil.

Controlled studies demonstrate that available preparations protect 50 percent to 70 percent of those susceptible to vomiting due to seasickness These levels of protection are obtained with mutine distribution of the drug. With individualized dosage the record should be even better and the balance between side of fects and control more satisfactory Persons vary in their response to therapy and susceptibility to motion There is at present no "magic bullet" for seasickness. In a patient responding inadequately to standard therapy, it is necessary that the dosage be patiently titrated against his susceptibility, response and the provocative stimuli. Inadequate and excessive doses equally evoke the patient's discouragement and mistrust.

Various agents may be needed in the difficult cases 1 2 6 Be sides dimenhydrinate other valuable preparations are diphen hydrochloride (benadryl), 1 6 1 descriptions explicate (desection), desoxyephedrine hydrochloride (desection), scopolamine 1 6 2 1 and meclizine hydrochloride (bonamine) 1 5 Screening studies have shown that diphenhydramine is just as effective as dimenhydrinate certain persons resistant to the

charged eight days after admission with a weight of seven pounds six and one half ounces When seen at 12 weeks of age she weighed 13 pounds and was doing well





(ca e 1) Ro tgenogram bow g ext so of ga t th dod m. Fgur 3 (ca 1) Roentg nogr m hou g sod do I t el g thro gh th mall t tm after pa g the pylorus. The locat of th partial ob tret on the prent not evide t

Case 2 A thee week-old male infant was admitted to the hospital because of listlessness and loss of appetite swelling and redness of umbil cus loos stools and abdominal distention. The abdomen was se erely d tinded and the umblicus was obviously infected and surrounded by induration. The init al impression was that of an acute omphalitis and pe itonitis with secondary paralytic leus

Conserv tive medical management consisting of nasogastric in tubation with continuous suction wa mmediately started Vigorous artibiotic therapy and the administration of fluid were instituted

The fast 24 hours wa most dramat c change in the child's clinical condition on the above regimen. The abdomen became soft and flat The redness about the umbilious decreased and the state of hydration was much improved but loose stools of pea green color continued to be passed After 48 hours of med cal management a palpable I er and spleen were felt but the umbilious was no longer red. The child made a rapid and uneventful recovery

Case 3 A three week old female infant was admitted to the hospital because of fretfulness poor appetite abdominal distention and fever. The abdomen was severely rotund and tympanitic. There was an um-



Figu e 4 (case 3). Roenigenog am shou ng mult ple fluid levels in the small intestine. The increased distance between adjacent loops of bowel suggests edema of the bowel will o intrapentoneal fluid.

bilical infection surrounded by a purple red skin discoloration radiating upward and outward. No organs or masses were palpable, and boxel sounds were not heard.

A roembenogram revealed multiple fluid levels in the small intestine in addition the distance between adjacent air-containing loops of bowel appeared to be increased suggesting either edema of the bowel wall or more probably the pres nee of intraperitoneal fluid. The properitoneal far pad on the right was completely obliterated (fig. 4)

The initial clinical impression was acute omphalitis with acute peritonitis

A conservative course of medical management initiated immediately included decompression of the storach large doses of antibiotics and supportive therapy with fluids. The infant responded well and within 48 hours was taking and retaining fluids given orally. Six days after admission she was discharged fully recovered.

DISCUSSION

Infections of the umbilious and their sequelae are directly related to the normal anatomic and physiologic changes occurring in the umbilical structures of the newborn At birth fetal circu lation ceases and the umbilical structures begin to obliterate Anatomically the two umbilical arteries are continuous with the hypogastric arteries which arise from the internal iliac arteries in the pelvis course along the posterior aspect of the abdominal wall on each side of the urinary bladder and meet as paired ves sels at the urbilicus The large umbilical vein enters the ab dominal cavity through the umbilious and courses upward in the free margin of the falciform ligament into the liver where it divides into two main branches. The larger of the two empties into the portal vein and the smaller continues upward as the ductus venosa to enter into the inferior vena cava. The fact that these vessels are separated from the abdominal cavity by only a single layer of peritoneum and a thin irregular layer of areolar tissue makes the anatomic vulnerability of the abdomen to invading urbilical infections at once apparent. Thus a rild urbilical infection only needs to extend a relatively short dis tance to produce a serious peritonitis

The time consumed in the obliteration of these umbilical tructures is of extreme importance in the spread of infection. The usual stated time for obliteration of these structures is five days yet recent autopsy studies have shown that a vessel lumen may contain only a partially organized clot from 20 to 50 days. Therefore final transformation of these umbilical vessels into complete fibrous cords will require a considerable amount of time. Consequently, the direct spread of organisms into the peritoneal cavity or the blood stream via these slowly atrophying fetal structures is possible until about the age of six weeks of life.

Sepsis from the umbilicus may be due to several pathogenic organisms. Audion has shown that saprophytic infection of the umbilicus causes a delay in healing and gives ri e to an in creased liability to invasion by pathogenic organisms. Bacteriologically, Str. pyogenes is the most frequently recovered organism from both the umbilious wound and the blood stream Vicrococcus pyogenes var aureus Micrococcus pyogenes var albus E. coli, and Diplococcus pneumoniae are occasional invadors and are more likely to be found in combination than as single infective agents.

Probably the most frequent mode of entry for organisms in primary peritonitis is the blood stream. In 1939, Ladd and others' reported a series of 67 cases of primary peritonitis and stated that over 50 percent of these illnesses were preceded by an upper respiratory infection. Of these 67 cases, however, only 11 were reported to be under one year of age, and we could not ascertain whether any of these were in the neonatal period. It is significant that the umbilicus was not incriminated as a portal of entry in any of their cases. In the literature, the gastro intestinal tract, the transdiaphragmatic lymphatic, and the vaginal tract and fallopian tubes have all been listed as portals of entry in primary peritonitis. In the three patients presented herein, primary peritonitis followed a definite umbilical infection.

There exists in the neonatal infant three factors that predispose to the development of a generalized peritoritis (1) The lack of an adequate omentum which has not yet developed to a point where it can combat infection by the usual "walling off" process, (2) the lack of any acquired immunity to combat the invasion of even a minor infection, and (3) the bacteriologic phenomenon whereby the peritoneum can withstand to some degree the onslaught of a single infective agent but will tolerate only poorly the multiple infective agents. Because of these factors, peritonitis in the newborn period must be diagnosed and treated early if the mortality rate is to be reduced

The failure to find free air under the diaphragm by radiologic examination was one of the strong points that led us to regard the two latter cases as primary peritonitis. There can be no hard and fast rules whereby a primary peritonitis can be differentiated from a secondary type

The classical clinical picture is described by Ladd and Gross' Infants exhibit crying, irritability, and restlessness. The temper ature is elevated Diarrhea is found in 50 percent of the patients, and vomiting is frequent. (In two of our three cases the diarrheal stools and the material obtained by nasogastric aspiration were thin, watery, and pea green in color) If either vomiting or diarrhea is sovere or protracted, dehydration will ensue. Excessive per spiration is said to be common, although not noted in any of our patients.

On physical examination these infants appear to be severely ill. The pulse is found to be rapid. The abdomen has a soft dough," feel and some degree of distention is the rule. Rarely shifting dullness may be found. Peristaltic activity may be in creased early but will be diminished to absent later. The total white blood cell count is always elevated. The greatest confusion lies in deciding whether or not the diagnosis should be a secondary peritoritis due to rupture of a hollow viscus. Appendicitis which is one of the most common causes of secondary peritoritis is rare in the neonstal period. Roentgenggaphic examination of the abdomen must be relied upon to rule out me chanical obstruction of the gastrointestinal tract. The chest signs on physical examination and a roentgenogram of the chest should rule out preumonia.

Ideally if these illnesses can be diagnosed with any degree surety as primary peritornitis and if the additional hazard of surgical exploration can be avoided the best hope lies in good medical management. As has been pointed out the most likely bacteria is one of the streptococcal or pneumonococcal groups. Because specific bacteriologic diagnosis is often delayed one must begin antibotic and chemotherapeutic treatment of the patient before the organism or its sensitivity is known.

An adequate regimen for ranagement of these cases in the newborn period should be as follows

- 1 "hole blood (20 cc per kilogram of body weight) should be given by transfusion.
- 2 An addition 1 130 cc per kilogram of body weight of fluids should be adm instered during a 24 hour period \0 more than 30 cc per kilogram of fluids should be n the form of an electrolyte solution the termining 100 cc per kilogram should be nonelectrolyte solution.
- 3 Nothing should be given by mouth and continuous nasogastric suct on should be maintained
- 4 Antib otic and chemotherapeutic agents should be given as follows

 (a) Six milligrams (10 000 units) per kilogram of aqueous penicill n a dy should be given intranuscularly in divided doses every three bours. An addition 1 600 mg (1 000 000 units) should be given intra venously (b) Per day 0.2 gram per kilogram of sulfadiazire should be given n divided doses every four hours. This may be given intra muscularly by using, a five-percent sulfadiazire sodium silurin in which each oc contains 45 mg (c) Per day 5 mg, per kilogram of oxystetracycline (terramycin) should be given in divided doses e ery six hours.
 - 5 Oxygen and warmth should be admin stered in an Isolette unit

6 The patient should be observed constantly and re evaluated at short intervals

If the report of a bacteriologic culture should reveal an organ ism that will not respond to the above regimen, re evaluation and specific therapy should obviously be instituted

SUMMARY

Although primary peritonitis was once a common infection and sequela in the preantibiotic and preaseptic eras, it is now sel dom reported. Three cases of primary peritonitis reported here occurred following umbilical infections. In these cases the mode of entry of the causative organisms was by direct transmission through the umbilicus. Because the most common mode of peritoneal infection is now currently reported to be by hematogenous spread, these cases show that direct spread from an infected umbilical wound is still a real danger.

The regimen for management includes blood transfusion, the administration of fluids, nasogastric suction, and antibiotic and oxygen therapy

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PEPTIC ULCER IN MILITARY PERSONNEL

Management in the Outpatient Clinic

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PEPTIC ulcer is one of the chief medical causes for prolonged hospitalization in the military service and a frequent reason for separation from the service These facts have received considerable study by Palmer and his associates. This article describes a program of outpatient management of patients with peptic ulcers in a large basic training post and presents observations and statistical analyses of the results. This program was first instituted because of the many problems encountered in the management of patients with ulcers in the military service. These include reduction of the effective strength of the command, the necessity for separation of some soldiers from service, and the need for disciplinary action in many cases. It was believed that it would be more economical to maintain these patients on duty status whenever possible. This would eliminate hospital ization as a secondary gain because this is often a detriment to patients adjustment.

METHODS

From 1 April 19.3 through 31 March 1954 personnel of the medical and social work clinics worked closely together in the diagnosis treatment and follow up care of 102 patients with reentgenologic evidences of peptic ulcer. This group was comprised of enlisted men of all ranks and with service of varyinglength.

All patients with gastrointestinal symptoms were first examined in their area dispensaries and the indicated diagnostic studies including an upper gastrointestinal series were carried out When a patient with a peptic ulcer was found he was referred to the outpatient clinic where if indicated further diagnostic procedures were requested in the absence of complications such as bleeding penetration or obstruction the patients were placed on the following regimen

FmUSArmyHptalFrt]kSCDT ow hCayClSaBT

- 1 Aluminum hydroxide with magnesium trisilicate, taken 30 minutes after each meal and at bedtime
- $2\,$ Methantheline bromide (banthine bromide), $50\,$ mg , taken $30\,$ minutes before each meal and $100\,$ mg $\,$ at bedtime
- 3 One half pint of milk taken five times a day in addition to the regular ration
- 4 Patients were given dietary instructions and were encour aged to carefully select their food and to avoid highly seasoned and greasy foods
- 5 A permanent P-3 was placed on the patient's physical profile record with a recommendation that his assignment be to an installation where regular hot meals and supplemental milk rations were available, that he be permitted to select food from the regular serving line and that prolonged physical evertion and heavy exercise not be required. It was recommended that basic trainness be required to complete only an eight week training cycle followed by an assignment to a service school or similar type job.

When it had been ascertained by the medical officer that the patient could be safely treated on an outpatient status he was referred to the medical social work officer who attempted to help the patient with any environmental or emotional problem which might be interfering with the medical treatment or aggravating his ulcer symptoms. Helping the patient adjust to service life and associated emotional difficulties was considered a part of the total medical treatment. Patients with ulcers present many problems which may be ameliorated by the social worker.

A mimeographed "milk certificate" was prepared for use at this installation to authorize unit commanders to requisition supplemental milk for such patients. These milk certificates, together with report of physical profile, were hand carried to the patient's unit by an enlisted social work technician

After completing the initial medical and social work evaluation, the patient was returned to duty with an appointment to see the social worker in one week. The patient was continued in a case work status for help with his personal problems or directed to report back to the clinic from four to six weeks for re evaluation of his military adjustment. Patients were seen by the physician only when medical complaints were present and by the social work officer when it was evident that his personal adjustment was the primary difficulty. Patients were instructed that they could return to the clinic any time during regular hours for renewal of prescriptions or for discussion of medical or personal difficulties. Patients who required hospitalization during initial

examination we e placed on this program after minimum hospital ization

When the patients were returned to duty, unit commanders were requested to complete a questionnaire concerning the patient efficiency adjustment, and value to the Army The average length of time from the first evaluation of the patients until the completion of the questionnaire was 732 months The questionnaire was a checklist for the patients immediate superior officer to rate his officiency using standard efficiency report phraseology in addition a group of questions were listed which would reflect the soldiers adjustment in his unit The basis of our evaluation of this program is thus dependent upon the patients superior officers rating of his duty capabilities and adjustment within the unit

RESULTS

This group of 102 patients consisted of 37 enlistees and 65 inductees both serving as cadre and trainees. The proportion of enlistee inductee and cadre trainee for those with ulcers was the same as the over all ratio at this training post. Table 1 presents graphically the length of service up to the time the patient was first interviewed in this study About 55 percent of the patients had less than four months of service. Of the 21 men with more than 12 months of service eight had from five to 10 years of service and two had served over 10 years.

The status of the 102 patients at the time questionnaires were obtained is given in table 2. The average length of time the men were in the units in which their efficiency, was evaluated was seven months. High replacement rates of personnel are characteristic of training posts and no attempt was made to decrease the mobility of the study group because of the diagnosis of pepticulier. When the questionnaires were completed only 20 6 percent of the patients remained at this post. The only consideration given in duta assignment was that normally accompanying a P 3 profile. The data in table 2 has been grouped into four sections to facilitate statistical computations and comparisons. In computing efficiency ratings only group 1 (returned to duty status by medical officier) and group II (discharged from the military service) were considered.

Of the 102 patients in the study 83 were in group I and eight were in group II at the time the questionnaire was completed The 11 patients in group III were not considered because two were bespitalized for other reasons (one with pulmonary tuber culosis and one with arthritis) one patient had been killed in an accident and on eight follow up data were not sufficient regarding their officiency and adjustment to include them further

TABLE 1 Disinbution of patients unth ulcers in enlistee inductee categories according to number of months in service when first intervieued

	Total	a1		Enlistee			Inductee	
Length of service	Number	Percent	Total	Cadre Trainee	Traince	Total	Cadre Traince	Traince
Less than 2 months	32	31.4	9		9	26		56
2 months but less than 4 months	24	23 5	~		4	20		20
4 months but less than 6 months	16	15.7	4		4	12		6
6 months but less than 12 months	0	8 8	4	4		۰		4
More than 12 months	21	20 6	19	19		~	2	
Total	102	100 0	37	23	14	\$9	9	59

The efficiency ratings shown in table 3 are based upon the completed questionnaires of 91 patients in groups I and II Thoso medically discharged or administratively separated for unsuitability under the provisions of AR 615 369 were automatically considered to be unsatisfactory of these 91 patients 81 3 per cent were rated satisfactory while 18 7 percent were unsatis factory Of the 17 patients rated unsatisfactory two were in the stockade two were listed as deserters one was absent without leave eight had been discharged from the service and only four men were performing their duties but were rated as unsatisfactory by their commanding officers

TABLE 2 Stt of 102 pt t ttm quet na ua mpltd

St t	Number	P
G p I R tur d to d ty tatu by m d 1		
Pfmgdy	72	70 6
Eprat ftrm f	6	5 8
1 t k d	2	2 0
Ab twh tl	1	10
D t	2	2 0
T 1	83	81 4
G pli D h gdf mth mit y c		
Mdellyd hgd	6	58
AR 615 369 d h rge	2	20
T tal	8	78
G p III O h s		
Dd(ted)	1	10
Plm y be 1 th t	2	2 0
Inad quat f llow pd t	8	78
T I	11	108

Ratings were obtained on 33 enlistees and 58 inductees. The major significant differences in efficiency was in the two trainee groups. Only 50 percent of the 12 enlisted trainees whereas 80 6 percent of the 5° inducted trainees were rated as satisfactory. This disagrees with previous studies which have inferred that inductees with ulcers were poor risks for return to duty because of the high rate of rehospitalization.

TABLE 3 Efficiency rating of enlistees and inductees

	Total	la I		Enlistee			Inductee	
l'fliciency rating	Number	Number Percent	Total	Total Cadre Trainee	Traince	Toml	Toml Cadre Trainee	Traince
Satisfactory	74	813	56	20	9	48	9	42
Unsatisfactory	17	187	7	-	9	10	0	10
Total	16	100 0	33	21	12	58	9	52
								1

In attempting to obtain a better idea of how these patients rated in adjustment after return to their units for checking by the unit commander the following statements were included in the questionnaire (1) Unit had no knowledge of revised profile (2) Needs no special consideration (3) Wants special consider ation but works well (4) Complains constantly (5) Extra milk rations and diet are too difficult to arrange (6) Loses too much time from duty because of ulcer symptoms (7) More trouble than he is worth to the unit. The majority of the questionnaires re turned had only one of these statements checked Of the 74 men rated as satisfactory on efficiency 40 5 percent were not I nown by their unit to have had a revised profile We assume that in these cases the man with an ulcer did not complain of symptoms and so his revised physical profile was not brought to the attention of the rating officer Fifty five questionnaires indicated that no special consideration was needed Worls well but wants special consideration because of medical condition" was report ed six times Complains constantly was checled on only one questionnaire and that was on a soldier who was categorized as unsatisfactory It seems significant that "extra milk rations and diet too difficult to arrange was checked only twice "Loses too much time from duty because of ulcer symptoms was report ed five times On three completed questionnaires it was indicated that the man was more trouble than he is worth to the unit

The final efficiency rating of the soldiers with peptic ulcer in this study was not influenced by hospitalization when compared to the rating of those not hospitalizated (table 4). A total of 1 105 hospital days were used during the year covered by the study this represents an average of 10 83 days per man in the study or an average of 25 70 days for each of the 30 men we hospitalized in Palmer's series the average period of hospitalization in over 30 percent of his patients was between four and seven months and the group as a whole spent 10 percent of their service time in the hospital A portion of the difference in length of hospitalization is probably related to the fact that Palmer's series concerned patients in a general hospital who had more sovere symptoms and complications.

The noneffective rate for patients with ulcers at this instal lation from 1 April 1953 through 31 March 19.4 was 0 10° per thousand The average total noneffective rate at this instal lation for all injuries and diseases during the same period was 16 52 These figures were computed by using the standard time formula for noneffective rates By comparison previously reported noneffective rates for patients with ulcers were 0 42 per 1 000 troops on the average day for the period 1942 1944 and 0 3° per 1 000 troops on the average day for the period 1937 1940 standard times 1948 times

TABLE 4 Efficiency rating of hospitalized and nonhospitalized groups

		Efficiency rating	
Group	Satisfactory	Unsatisfactory	Total
Hospitalized	30	8	38
Nonhospitalized	44	9	53
Total	74	17	91

Ch quar (X²) wa dit tith significance of the difference between the bid and the pect of fig. c. furfold contragency tables Th. Il lips the tit bet tid as (1) the best of frequent to equal to the epected (2) Il be edp pot is qual. The best in dichi quart is 2415 who pobbly for the country of the control of the country of

Table 5 illustrates the average number of times the subjects were seen in the medical, social work, and mental hygiene clin ics. These visits were in addition to any hospitalization For purposes of comparison those with satisfactory and unsatisfactory ratings averaged the same number of visits to the clinics.

TABLE 5 Ave age number of visits made to the cles

	Clinic		Total
Social Work	Mental Hygiene	Medical Service	10
4 50	4	19	6.8
	Work	Social Mental Hygiene	Social Mental Medical Work Hygiene Service

Tst fth ignificace of the difference the mean fth tisfactory and unst fetry grup f the three type of clinic yield didtoll lithan 10 fth per ballity of obsering such vale 1 s between 25 d 50 fthet fore ceept hyp the the the compired meases tilly qual did that the difference to the sufficient state of the compiler of the sufficient state of the compiler of the compi

The results obtained by medical treatment of these patients was uniformly satisfactory. About 20 percent of the patients remained at this post From observation of those patients retained at this station and from the report of the questionnaires, their response to treatment was believed to be good. As has been previously mentioned, some of these patients were hospitalized initially for study but none were rehospitalized after the out patient treatment program was started. An complications were encountered in any of the patients following the initiation of outpatient management. The absence of bleeding, intractable pain, episodes of obstruction, or other complications was strik

ing After an initial period of close observation and intensive treatment, many of the patients were symptom free as a result of diet management alone From the number of outpatient visits it was obvious that these men did not ride the sick book. There were instances of recurrence of pain but reinstitution of the medication was successful in relieving these symptoms. The primary factor in those few patients who continued to have complaints was emotional instability rather than recurrence of ulcer symptoms

DISCUSSION

Prior to the initiation of this program in April 1953 there was an average daily census of 25 patients with peptic ulcers hos pitalized in this installation. The average daily number of pa tients hospitalized during the previous year had ranged from '0 to 35 all were housed in a single ward and were restricted to that ward Many disciplinary problems arose in this group Pa tients with severe persistent symptoms were discharged from the service for medical reasons. This undoubtedly had an ad verse effect on the motivation of the other patients on the ward The secondary gains of hospitalization were such as to militate against the patients recovery and a behavior pattern had been established in those who were returned to duty which undoubtedly resulted in loss of efficiency

It is now the policy to treat these patients on an outprtient basis unless some complication should arise which warrants inputient treatment. In many instances these patients were hos pitalized initially and when the diagnosis was established, treatment was instituted in the hospital but the patients were returned to duty as soon as possible and treatment was con tinued in the outpatient clinic Usually no more than three or four patients with ulcers were in the hospital at any one time Because they understood they would be returned to duty they were motivated to return as soon as possible No serious dis ciplinary problems were encountered and the doctor patient re lationship was much more satisfactory

any physician man hours were saved by reducing the period of hospitalization and by the use of the assistance of the med ical social work officer Stress encountered in adjusting to the military service was often the precipitating factor in the production of symptoms Frequently the patient closely identified himself with the social case worker thus making it possible for the worker to help him with his social and military adjust ments Environmental manipulation was a positive factor in aid ing the patients adjustment When the social worker noted that the patient was not progressing satisfactorily he was referred again to the physician This approach saved the physician time and still gave the patient a complete and thorough follow up

Our conclusions are based on present and previous obser vations In tabulating the results comparison was made with the status of patients with ulcers who were previously treated at military installations We believe from this comparison that the patients in our study made a better adjustment to military service than could ordinarily have been expected. The majority functioned efficiently in their units and were rated as acceptable by their unit commanders. On the whole, they presented no greater problems than the average soldier If patients with peptic ulcer are to be inducted into the service and retained on military duty, their initial management is of utmost importance to their future adaptation If, early in the course of their military training, they are exposed to a situation which will encourage them to believe that by exaggerating their complaints they will be discharged from the service or receive other benefits, their adaptation will probably be poor It logically follows that hospitalization should not be a part of the routine management in such patients and that separate wards should not be used to treat them From our study we concluded that outpatient treatment utilizing social case workers is entirely feasible and better prepares these men for a satisfactory adjustment to military life

The approach to the problem of peptic ulcers might perhaps be different in peacetime than in time of a national emergency If patients do not respond to a treatment program such as we out lined we believe that they will in all probability present a con tinuing problem and if a trial of duty with treatment fails perhaps such persons should be medically discharged Those patients with ulcers and psychiatric or personality defects who do not respond satisfactorily to any type of management should be given an early administrative separation. This study did not include an analysis of the relationship of the duration of their illness to their response to treatment It is our belief, however that those patients with long standing ulcers with recurrent symp toms or complications should be evaluated promptly and separated from the service if their response to treatment is questionable This is particularly true in peacetime when the manpower situ ation is less critical. This in no way invalidates the results which we have encountered and if patients with ulcers are to be retained on active duty, outpatient management is to be en couraged

SUMMARY

An outpatient treatment program of 102 enlisted men with peptic ulcer was established at this post. Hospitalization was not

a part of the treatment and was used only when medical complications arose From data obtained from questionnaires completed by the patients commanders we have concluded that the majority of these men were able to perform their duties of ficiently and that they made a satisfactory adjustment in the military service Outpatient treatment for such patients is en tiroly feasible and results in a saving of physician man hours spent in the treatment of this disease. The noneffective rate in this group was less than that reported in previous studies. The outpatient treatment of patients with peptic ulcer is the preferable approach to this problem in the military service.

REFERENCES

DR EDWARD H CUSHING NAMED DEPUTY TO DR BERRY

Dr Edward H Cushing of Washington D C on 3 M rch 1955 became the first Deputy Assistant Secretary of Defense (He kh and Medical) when he took the oath of office in a Pentagon ceremony witness d by Dr Frank B Berry and other high government officials

A metive of Cleveland Dr. Cushing was graduated from Harvard Medical School in 1923. He served as a lieutenant of field artillery in Weld War I and during World War II was an officer in the Nedical Corps. U. S. Na. y. Reserve. From 1946-1952 he was assistant chief medical officer of the Veterans Administration for research and education. He is a specialist in cardiology certified by the American Board of Internal Ned cine.

The newly cre ted posit on as deputy to Dr Berry w s established in accord nee with one of the recommendations of the Hoover Commission on Organization of the Executive Branch of the Government

CLINICAL ASPECTS OF RETROLENTAL FIBROPLASIA

GEORGE L TABOR Jr Commander (MC) USN
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ALL PREMATURE infants born at this hospital between Au gust 1951 and June 1953 were studied by members of the departments of ophthalmology and pediatrics for evidence of retrolental fibroplasia. Although this brief report of their observations offers no original contributions, the statistics presented from a large general hospital may prove beneficial in analysis of this increasingly perplexing problem.

Detailed ophthalmoscopic examination of all infants over two weeks old having a birth weight under five pounds were made weekly. Homatropine hydrobromide solution (four percent) was instilled in each eye every 10 minutes for four doses to obtain mydriasis. A sterile rubber nipple pacifier facilitated adequate ophthalmoscopic examination with minimal restraining Each child was examined once a week for three months and thereafter as indicated.

The following features of the premature fundus were frequently encountered and are considered to be normal (1) Presence of remnants of the hyaloid canal vessel system, (2) pale optic nerve head and retina (3) retinal vessels more tortuous and dilated than in the adult fundus, (4) the consistently gray peripheral zone of the retina (not to be confused with early retinal separation), and (5) absence of foveal light reflex

In addition to the above findings, remains of the pupillary membrane were often present, and occasionally transitory retinal hemorrhages were noted, presumably due to birth trauma. All though minus lenses were often needed to see the fundus vell, this was in no way found to be correlated with retrolental fibroplasia.

For this series retrolental fibroplasia was divided into the following stages

Stage 1 Increased tortuosity and dilatation of the retinal vessels and early neovascularity of the retina

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Stage 2 Peripheral retinal edema more advanced neovascu larity retinal and preretinal hemorrhages and haziness of the vitreous

Stage 3 Early retinal separation

Stage 4 Massive to complete retinal separation and retrolental fibrous membrane

During this 21 month study there were 6 636 live births at this hospital of which 349 (5 3 percent) weighed less than five pounds at birth A total of 16 cases of retrolental fibroplasia (4 5 percent) vere discovered in this group of premature infants

Forty three percent of the infants weighing less than four pounds developed retrolental fibroplasia. Only two infants weigh ing more than 3 pounds 12 ounces developed retrolental fibroplasta, the largest weighing 4 pounds 8 ounces. During the period of this survey an additional group of 21 cases of retrolental fibroplasia falling outside the scope of this report were studied These included referrals from other hospitals and those born before the start of this report

Of those infants afflicted with retrolental fibroplasia (RLF) the disease process was arrested in three cases in stage 1 two in stage 2 four in stage 3 in seven the disorder developed to stage 4 and these infants were considered totally blind

The over all incidence of RLF has never been accurately determined Some hospitals have reported a complete absence of the disease while others have indicated an incidence rate as high as 75 percent in premature infants. The rate has varied from time to time in the same hospital and has shown marked variation in different hospitals in the same community Certain areas of the country have reported the prevalence of this con dition but in other sections this has not occurred. The prevalence of the condition however has been shown to be directly related to the degree of prematurity of the newborn infant

By way of comparison with another naval hospital it is of interest that during a period of three and a half years (1947 1950) no patients with RLF were discovered at the U.S. Naval Hos pital Philadelphia Pa by two of us (G L T and J F S) Whereas no systematic study was made during this period all suspected premature infants were carefully examined ophthalmo scopically and there was excellent follow up in the pediatric department during the first six months of postnatal life One case of bilateral leukocoria was discovered in a full term infant. One eye was removed because of the possible presence of retinoblastoma On pathologic examination however a diagnosis of retinal dysplasia was made

Most of the fundi of the prematures in this series were normal at the first examination at age two weeks. The earliest pathologic changes were observed during the third to sixth week, after which the disease progressed rather rapidly. Little change was seen after the third month of life

Medical and surgical complications were infrequent. One patient developed secondary glaucoma at the age of six months which was relieved by a posterior sclerotomy, and, to our surprise, has since remained symptom free

In the last six months of the survey the incidence decreased—only two new cases were found (one arrested at stage 1, the other arrested at stage 3) In no case under our observation did actual regression take place once advanced neovascularization or retinal separation occurred

Nursery surroundings and conditions were no different from the average premature nursery in a large civilian hospital Small premature infants (below three and one half pounds) were fed on an Olac formula, larger prematures on an evaporated milk formula (one part of evaporated milk to two parts water, with four tablespoonfuls of Dextro-maltose No 1 to each 24 ounces of formula) All infants under four pounds were kept in incubators with the minimum amount of oxygen supplement necessary to prevent respiratory embarrassment Infants weighing under three and one half pounds were generally placed in Isolette incubators where high humidity could be maintained Vitamins were ad ministered in the form of Tri visol, 03 cc, starting at seven days, then gradually increasing to 0 6 cc This ensured an intake of 5 000 units of vitamin A, 1 000 units of vitamin D, and 50 mg of vitamin C Liver extract was not given intramuscularly Aque ous penicillin was administered in cases of suspected atelectasis and when there was a history of fetal membranes being ruptured prior to delivery Small blood transfusions were given in two premature infants in our series because of severe anemia

During the time of this clinical study and since the original draft of the manuscript the attention of ophthalmologists and pediatricians all over the world has been brought to focus on the role of oxygen in the etiology of retrolental fibroplasia Many astute observers have made outstanding contributions in this field, but only a few observations will be high lighted in this brief discussion

The medical profession is heavily indebted to Drs Owens and Owens' for their pioneer work in which they proved that RLF was an acquired retinopathy and not a hereditary or congenital condition Their monumental study opened the doors and laid the foundation for subsequent studies which have led to the

more enlightened and advanced state of our current knowledge of this distressing catastrophe in the prematurely born

hinsey and 7acharias' pointed out in 1949 that there may be a correlation between oxygen therapy and the incidence of RLF

Campbell suggested the possibility that RLF might be due to oxygen toxicity related to use of high concentrations of oxy gen She reported that of those premature infants receiving high concentrations of oxygen 18 7 percent developed RLF whereas the incidence was only 7 percent in those receiving moderate oxygen therapy

A year later Crosse and Evans' expressed the opinion that the changes in the retina in this disease are derived from a pre liminary adjustment of the retina to a high oxygen tension where by the retina loses its ability to accommodate itself to a relative anoxia on removal to atmospheric oxygen having acquired an inertia of response They believe that the recent onset of the disease is definitely related to the advent and free use of ovvgen tents and incubators

Detailed clinical observations of the premature fundus under the influence of various concentrations and methods of adminis tration of oxygen were first reported by Szewczyk 7 He con cluded that RLF is a terminal stage of anoxic retinopathy due to insufficient oxygen supplement to the infant to the sudden removal of the premature from high to low oxygen concentration or to the constant change from high to low concentrations of oxygen

Recent reports 1 have furnished evidence which is nearly conclusive that RLF is due to an abnormal response of the retina of the premature infant to a relative state of hypoxia The highest incidence rate occurs in the premature infants of low birth weight (under 1 500 grams) who have been subjected to high concen trations of oxygen (60 80 percent) in incubators and then removed suddenly to normal atmospheric oxygen (21 percent)

Recent experiments in newborn animals - have produced a retinopathy pathologically similar to that found in retrolental fibroplasia The pathologic picture of RLF is essentially that of neovascularization due to proliferation of the retinal capil laries Invasion of the vitreous ensues with subsequent cica trization contracture and retinal detachment terminating in & complete retrolental membrane and total blindness

It must not be concluded that relative hypoxia is the sole cause of retinopathy of prematurity Investigators are of the unanimous opinion that there must be continuing studies to de

termine the influence of other factors. We are in complete agreement with Ingalls and Purshottam' that factors such as electrolyte balance and respiratory enzymes in the newborn infant, temperature, and humidity need further investigation.

Nearly all observers and investigators in this field believe that (1) premature infants should be given only that amount of supplementary oxygen necessary to prevent cyanosis and respiratory distress, preferably under 40 percent, (2) the infant should be given supplemental oxygen for the minimal period of time, and (3) withdrawal of the premature infant from an environment of high concentrations of oxygen to one of normal atmospheric oxygen should be a gradual process. It has been suggested. "that premature units be provided only with tanks containing 40 percent oxygen and 60 percent nitrogen so that the danger of excessive oxygen concentrations can be completely prevented."

SUMMARY

Premature infants should be observed during the first three months for the development of retrolental fibroplasia, making during allowance for those features normally seen in a premature fundus. The earliest pathologic changes were observed during the third to sixth week in this series.

The incidence of retrolental fibroplasia appears to be a direct function of prematurity Sixteen cases were discovered among 349 infants weighing less than five pounds. However, only two were infants weighing more than 3 pounds 12 ounces. This discorder developed in 43 percent of those infants weighing less than four pounds at birth.

Although retrolental fibroplasia may become arrested at any stage of development in no case was definite regression of the disease observed in this study once advanced neovascularization or retinal separation occurred No correlation between the incidence of retrolental fibroplasia and myopia was noted

Retinopathy of prematurity is due to an abnormal response of the retina of the premature infant to a relative state of hy poxia. The highest incidence rate occurs in the premature infants who are brought rapidly from an environment of high oxygen ten sion to normal atmospheric conditions.

Premature infants should be given only that amount of sup plemental oxygen compatible with normal respiration and survival preferably under 40 percent, and for the briefest possible time They should be gradually weaned from high oxygen concentrations to normal oxygen tension in air.

It has become mandatory for all premature nurseries to be equipped with a standard and acceptable oxygen analyzer and all nursery personnel should be trained in its proper use

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POSTGRADUATE COURSE AT WALTER REED

A short postgraduate course in gastroenterology and metabolism with special emphasis on military applications will be held at Walter Reed Army Hospital W shington D C 9 through 13 May 1955 The course designed to keep Army medical officers in outlying installations abreast of recent med cal advances and to keep the health of Army personnel at a high level is offered to both active and inactive duty medical officers as well as physicians from other governmental agencies medical officers of the Navy and Air Force and civilian physicians

VASOPRESSIN (PITRESSIN) IN DIURESIS OF RENAL INSUFFICIENCY

Studies in Patients With Hemorrhagic Fever

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THE CLINICAL, epidemiologic, and historical features of hemorrhagic fever have been described by Pruit and Cleve' Copious flow of urine of low specific gravity is characteristic of the diuretic phase of renal insufficiency complicating this disease. These authors report the occurrence of this complication in 60 percent of their patients. During the height of diuresis a 24-hour output of urine of eight to 12 liters is not uncommon, and one patient observed by us had a 24 hour output of 14 liters.

This study was designed to determine the ability of vasopressin (pitressin), the posterior pituitary antidurence factor, to effect tubular resorption of water and to increase the specific gravity of urine in patients with diuresis of low specific-gravity urine Such a study would aid in identifying the pathogenesis of this phase as one of renal tubular defect or of absence or diminution of the antidurence factor from the posterior pituitary gland

The combined evidence from laboratory findings and clinical observations brought about the question of the role of the pituitary in diuresis which simulates that of diabetes insipidus. Au topsy findings have revealed severe hemorrhage and necrosis in the pituitary gland. Hemorrhage into the gland substance results in a compression destruction secondary to the gland substance confining capsule and its anatomic position in the skull. The findings also have suggosted multiple areas of infarction secondary to hemorrhage and thrombosis. Clinical evidence suggestive of pituitary insufficiency has consisted of profound weight loss marked weakness and malaise, lack of libido with impotency, delay in facial beard growth, and diminished 24-hour 17 ketostomic exception.

PLAN OF STUDY

Eight patients with the confirmed diagnosis of hemorrhagic fever complicated by renal insufficiency were studied. These From 48th Surgic 1 Hospital Realization D. C.

patients were voiding four to six liters of low specific gravity urine daily They had abnormal excretion of phenolsulfonphthalein and failed to concentrate unne on withdrawal of water. The procedure was as follows

I Patients were kept at bed rest in a fasting state

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- 2 An indwelling catheter was inserted and the bladder emptied.
- 3 Two hundred and fifty cubic centimeters of water were given every 30 minutes throughout the testing period. The bladder was emptied every 30 minutes. The first specimen was discarded and succeeding ones were measured for volume and specific gravity
- A After 90 minutes of hydration as described above one cubic centrmeter (20 pressor units) of vasopressin was injected subcutaneously
- 5 At 30 and 60 minutes following the vasopressin injection, wine specimens were collected and volume and specific gravity recorded.

In addition to volume and specific gravity the specimens were also tested for albumin Continuous para aminohippurate (PAH) and endorenous creatinine clearance as indexes of renal plasma flow and glomerular filtration respectively were carned out dur ing this procedure. The results of these functions before and after the administration of vasopressin will be reported in the future

PHARMACOLOGY OF VASOPRESSIN

An active extract of the postenor pituitary was first obtained in 1894 by Oliver and Schafer * Subsequent fractionation and purification of the crude extract has led to identification of a pressor antiduretic oxytocic and melanophore-depressing principle The antidiuretic action of this relatively crude material was first described in 1901 by Magnus and Schafer who noted the specific renal effect as an increase in the resorption of water and a consequent reduction in urinary flow. In 1928 Kamm separated posterior pituitary extract into an oxytocic fraction called oxytocin (pitocin) and a pressor fraction (vasopressin) It is the latter which contains the antidiuretic factor

Oldham and others outlined the pharmacologic effects of vasopressin as follows (1) Increase in blood pressure (2) suppression of urine secretion (3) stimulation of gut musculature (4) constriction of blood vessels and (5) increase in blood sugar due to antagonizing effect against insulin

Clinical and experimental studies support the view that diabetes in ipidus is due to loss or diminution of the antidiuretic fac-Gilman and Goodman reported tor from the postenor lobe that the hormone maintains an equable water balance by acting in an antagonistic fashion to the adrenal cortex and to a diuretic substance in the antenor lobe. Best and Taylor' stated that removal or destruction of the entire pituitary by disease does not lead to the development of diabetes insipidus. Others have documented that complete hypophysectomy results only in transient diabetes insipidus 7 9-11. The presence of a functioning antenor lobe, as well as the inactivation of the posterior lobe, is essential for the maintenance of permanent diabetes insipidus. Although it is believed that the antenor lobe plays a role in water metabolism by secreting a diuretic substance, a specific diuretic factor has not yet been isolated from the antenor lobe.

Significant differences between the posterior pituitary extract for obsetvical use (pituitrin) and the antidiuretic substance were observed by Ham and associates "They compared the antidiuretic substance of human and rat urine with commercial posterior pituitary extract (pituitrin) with respect to (1) dialysis through cellophane, (2) ultracentrifugation, and (3) urinary chloride excretion in these three respects the antidiuretic substance in human and rat urine had different physical and biologic properties from those of the antidiuretic factor of the posterior pituitary extract.

Wall¹³ reported that the site of action of the antidiuretic factor of the posterior pituitary was the loop of Henle of the renal tubule. He further reported that the action of posterior pituitary extract is antagonized by xanthines and mercurial diuretics.

DISCUSSION

The use of extract from the postenor pituitary in the study of renal function is not new 13-13. Fishbergis believed that specific gravity tests for renal function are the most useful tests available Sodeman and Engelhardt -16 advocated the use of postenor pituitary extract for a renal function test. They noted that it provided a concentration test without prolonged restriction of fluids, and gave reliable results in the presence of ascites or cardiac edema. They found that 10 U.S. P. postenor pituitary units would inhibit in 15 minutes the diuresis normally produced by ingestion of 1600 cc. of water Maximum concentration occurred within the first two hours, and in normal persons specific gravity varied from 1023 to 1040. In patients with impaired renal function, the maximum specific gravity was considerably reduced. This is in agreement with our results (table 1). In our patients 1015, which is considerably below normal, was the maximum concentration. The average range was between 1004 and 1008. These results indicate renal insufficiency of variable degrees due to tubular defect rather than to absence or diminution of the antiduretic substance.

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Pasqualimi¹⁷ believed that the measure of urine volume following vasopressin injection was more appropriate than the measurement of urine concentration. He reasoned that because water resorption is one of the principal functions of renal tubules, and because vasopressin acts directly on the renal tubules to produce an increase in water resorption, this approach is a more direct way of estimating loss of function. When the kidney loses its capacity to effect water resorption, the antidiuretic hormone also loses its effect. He showed that normal patients had 16 to 76 cc (an average of 36 2 cc) of urine output following the intake of 1,000 cc of water and the injection of 10 pressor units of vasopressin. In normal patients amounts higher than 80 cc were never seen. In 19 nephritic patients amounts were always greater than 80 cc, and in some the antidiuretic effect had completely disappeared.

Our results are in agreement with those reported by Pasqualini in 19 nephritic patients. They are indicative of renal insufficiency of variable degrees due to tubular defect and demonstrate that when the kidney loses its capacity to effect water resorption the antidiuretic hormone also loses its effect. Decreased or absent action of vasopressin was noted in all patients except the eighth (table 1). This patient had a sustained and marked gastrointestinal reaction to the vasopressin injection and the vomitus measured 400 cc. Even so his urine output was far in excess of Pasqualini s average finding in normal persons. Findings in the second patient suggest complete absence of response to the antidiuretic action of vasopressin injection because the urine volume following the injection was greater (696 cc.) than before (602 cc.)

Pasqualini used the intramuscular route of administration and estimated that maximum response was obtained in 30 minutes. Therefore, he used unne volume obtained between 60 to 90 min utos following injection. We used the subcutaneous route of administration and estimated that maximum response was obtained in five to 10 minutes (this estimation was substantiated by blood pressure response and onset of symptoms characteristic of the effect of vasopressin injection). Therefore, we measured the urine volumes obtained within the first 60 minutes. We believe that such close similarity in experimental design allows comparison of data for purposes of drawing conclusions.

It is in order to question how the posterior pituitary extract, as a test of ronal function compares with other standard renal tests Wall's was interested in this problem and made such comparative studies in a large number of normal persons and patients with impaired renal function. He found that the results of testing with posterior pituitary extract in normal persons, hypertensive

patients without renal failure and patients with renal insuffi ciency compared favorably with those of the Fishberg concentration and phenolsulfouphthalein tests

CONCLUSIONS

In patients with hemorrhagic fever with multiple organ involvement, concern arises as to the role of each either separately or in combination, in producing observed abnormalities With both clinical and laboratory evidence of severe pituitary involvement, the diuretic phase of renal insufficiency in this disease required clarification because of its resemblance to diabetes insinidus

In both urine volume (water resorption) and specific gravity (unne concentration) vasopressin injection failed to effect a nor mal response as defined by Pasqualini s basic work. The results indicate (1) Presence of renal insufficiency of variable degrees due to tubular defect, and (2) loss of the kidney s capacity to effect water resorption or urine concentration resulting in loss of the antiduretic hormone s effect

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NEW HEMOGLOBIN STANDARD

The National Research Council announces that clinical laboratories are invited to participate in a field trial for use of certified standard solutions of cyanmethemoglobin for use in hemoglobinometry. The objective would be the establishment of a uniform hemoglobin standard available nationally which with a single method of analysis will permit comparable results from month to month and in all parts of the country. The minimum requirement for participation is agreement to

- 1 Report actual photometric readings of three standard solutions as routinely performed
- 2 Answer a simple questionnaire on the influence of various factors on the results of the hemoglobin determinations which will assist the council in its long-range plans for making this standard available on a national scale
- 3 Co-operate in the analysis and reporting of (a) an unknown solution of cyanmethemoglobin and (b) an unknown sample of blood

Distribution without charge will be made to civilian laboratories by the College of American Pathologists 203 North Wabash Avenue Chicago Ill to military and government laboratories by the Army Medical Service Graduate School the Navy Bureau of Medicine and Surgery the Air Force Surgeon General's Office and the Veterans Administration and to laboratories in Canada through the Division on Medical Research National Research Council Ottawa Ontano Canada Laboratories desiring to co-operate are requested to apply now to the distributing agency with which they are most closely associated

operation on a 30 year old laboring man who had chronic ulcer ation of the right lower leg at the site of previous injury was undertaken in stages first by surgically elevating the flap and then several weeks later by suturing it to the site of the defect. The present technic basically the same has been evolved over the years by the addition of various refinements aimed at in croasing the facility and safety of the procedure. The more significant advances include improvement of the so called delay procedures properative application of the plaster casts and the use of split skin grafts to cover the pedicle donor site. The technic to be described is a standard one for which we claim no share in originating. It has been employed in a number of cases over the past two years at this institution with uniform success.

PRELIMINARY PLANNING AND PROCEDURES

Careful planning of the entire procedure is the first fundamental of the successful cross leb transfer. The surgeon must know before the incision is made exactly what he will accomplish at each stage. He must know precisely the area and amount of its sue which will be used for the pedicle and he must establish its suitability from the standpoint of circulation and position. Uncertainty on any of these points should strongly counsel delay because it carries with it an increased risk of destroying the most valuable source of coverage and thereby rendering later stops much more difficult and time consuming.

The first step in the planning is the selection of the donor site for the podicle. This must provide an adequate area of completely normal tissue in an accessible part of the donor limb which should ideally be left with the least possible secondary deformity. From the standpoint of vascularity the medial aspect of the call and the anterior aspect of the thigh have been shown to be the most suitable. Independent of the thigh have been shown to be the most suitable in however it must be emphasized that through the use of sufficient delay procedures pedicles may be raised from any site and based in any direction even retrograde on the limb. The so-called delay procedures consist of staged elevations of the pedicle over a period of several weeks for the purpose of increasing the circulation through its base before the actual transfer (fig. 1).

Once the general area has been selected the exact cutline of the flap should be accurately mypped preoperatively. This involves measurement of the defect to be filled in an old injury because the area to be covered may enlarge somewhat after the excision of serr tissue the pedicle should be planned slightly larger than the defect in outlining this area it is convenient.

to cut a strip of adhesive tape to the size of the proposed flap. The most suitable donor area can then be determined empirically by approximating the legs in various positions and testing their

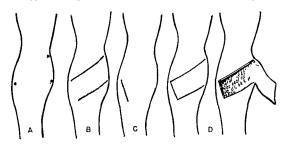


Figure 1 Diagrammatic stetches of the delay p ocedures" in preparing the ped cle to cove the defect shown in figure 7 (A) The flap is outlied on the leg the four oners are made as the four oners are made as shown by the beavy lines the ped cle indicated by stippling, is elevated from the deep farcia the incisions are sutured (C) About two ueeks late the distallend's incised and underruned as marked (D) Tracing the previous incisions the entire flip is unde min d and elevated the blood supply through the attached base being adequate The flap is nou eady for it cactual t ansse pocedue

relative practicability with the adhesive tape strip (fig 2) Points to be especially noted include the presence of sufficient tissue the avoidance of tension, torsion, and pressure and a comfertable cross leg position which will not interfere with excretory function Upon fulfillment of these requirements the area selected for the pedicle is outlined with die and the salient points marled with silver intride introduced intradermally on a fine hypodermic needle (fig 3)

After accurate delineation of the flap and sufficient delay procedures" have been accomplished (if needed) to assure ade quate circulation to the flap, it is advantageous to apply the plaster casts to each leg preoperatively. The position to be maintained by each limb is determined using the adhesive strip, and the casts designed accordingly. This permits easier application of the casts because the patient is able to assist in holding the desired position, and in the operating room it will mean greater speed and efficiency as well as less hazard to the pedicle. As described by Stark, a window is left in each cast, exposing the donor and recipient sites of the pedicle. The legs are not however, attached in the cross leg position until after

the completion of the operative procedure. At operation sterility and adequate exposure are easily achieved through proper draping of the areas exposed through the easts and the only further need for plaster is in the fixation of the cross log posture.



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THE TRANSFER OPERATION

The actual transfer of the pediclo is undertaken only after the nost careful planning has convinced the surgon that it can be accomplished as designed Because of the extent of the surgery involved it should be performed under general or spinal anosthesia. The pedicle is elevated first by following the predetermined outline and carefull, dissocing it from the underlying fascia (fig. 4). In this step the most meticulous technic is essential and all tension torsion and pressure must be avoided. In most cases it is best that the surgeon alone be responsible for all maneuvers with the flap and that only fine hoofs and rales be used in handling it to avoid every possible degree of tissue necrosis.

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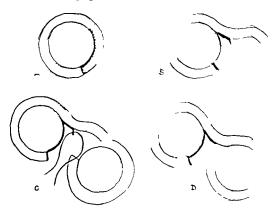
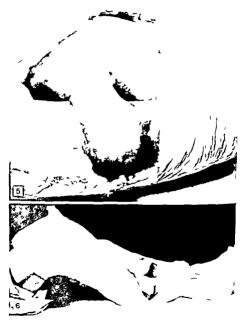


Figure . Cross sectional between the content of the process depth of incition and decimal the very large of the section of the process of the

because it provides, after suture of to the near edge of the defect a comparable to thus climates an open grand massiltant exudation and macerature treasures

The open area or sent ties excised so as to provide with a subcutaneous tissue to the pedicle graft will all atoly dipend for a minute of the pedicle graft will all atoly dipend for a minute of the pedicle graft will be subcut for the pedicle graft will all atoly dipend for a minute of the pedicle graft will be subcut for the pedicle graft wi

tirely on the circulation established between it and this sur rounding area. The latter must therefore provide the best possible conditions for augmenting this circulation.



g 5 Th cro 1g ped 1 f m th 1/1 calf pl the ghilk alter alls a h b x d. Th m du the gbuth hite op al ua p formed a ho n fgu 6 The p d l pla zho ghep lier cast uh ch the lg a muobl d f tl e k The sis ert applied p a t lyp p t ly d 1 d t g ther the t grom.

The legs are next brought together and long interrupted silk sutures passed through the free edge of the graft and the near edge of the defect, completely covering the open area on the donor leg (fig 4) The pedicle is then sutured into the defect over as much of its area as possible, using fine interrupted ab sorbable subcuticular sutures. The skin edges are accurately approximated vithout tension, using fine interrupted non-osorbable sutures. If it is remembered that it is through this interface that the blood supply of the flap must eventually come, the reason for care becomes obvious. A nonadherent bulk dressing is then applied and the casts fixed in the cross leg position, using plas ter bindage and braces as needed (figs 5 and 6).

Postoperatively the patient should be encouraged to move about and help himself as much as possible To this end a trapeze is essential, and a system of veights to counterbalance the bull of the casts may be of assistance The wound may be dressed after several days, and thereafter only dressing neces stated by local exudation (which should ideally be minimal) need be performed Temoval of skin sutures after seven to 10 days is optional Other care is routine

It has been established that properly applied pedicle grafts have sufficient peripheral circulation in three weeks to permit severance of the pedicle base. There are numerous tests for verifying this. The simplest consists in compression of the provimal end of the flap with a rubber shod intestinal clamp. Sufficient pressure to interrupt the blood supply is maintained for several minutes during which time the graft is observed for color changes.

Usually the pedicle can be divided in one stage and the free edges on both the donor and recipient legs sutured at the same time Occasionally a staged division and delayed suture of the cut edges is preferable

Following this stage the recipient limb is again immobilized until healing is complete. The patient is then embarked on a program of progressive dependency and, as conditions permit, advanced to graduated periods of weight bearing. During this entire period elastic support to both limbs is essential. The institution of dependency or motion before healing is complete is to be avoided, and will be signaled by the appearance of blisters, blebs, hematomas, and hemorrhage beneath the grafts

CASE REPORT

A 35 year-old man was transferred to this hospital about eight months after suffering a compound fracture of the lower right tibia and fibula

in an attemptile account. Immediately after the account the leg latbeen immobilized to a plast r cast which was removed five days later The wound was pecteric infected and slew to heal Although the fractures united well the e-was carril and persistent ulcer time of the sanw ... rain edems and discoloration of the foot

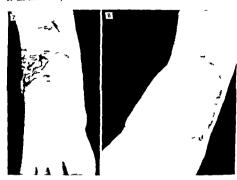


Figure " we lover leg enginonits after a compound fractor. The service and the service area of persistent identified for the position are evolution in love leg factoropical served. a er a on I he pen le The carred, leera d'area ha been re-liced to heal to be and a beats coas tiss

Finds Thintees the lower ligie ht months after injury On the aner or are e there was an area of som ex endire almost from one mult ous to the other. This sime was thin added ent to the home and the are in the great The free was slightly en majors and them was hushu to on on on diwadency Frances 1 4 5 and 6 of the sames ... he replacement of this scar with heal he skin and subcor tameous tissue by the methol Lescribed Figure S shows healt 5 # the size of the core

SUMMARY

Adrecate his and out to be coverage as e es all for more treatmen o compound in the of the extremitie ad i "os berrifical if analied as early as possible. In the lower extretues the cro- les pedicle fluo provide a convenie t and e feetine orce o thi covernge For be thre ult the procedure must be carefully planned in advance and executed with the most meticulous technic to protect the vitality of the tissues lielpful points of procedure include the use of an adhesive tape pattern in planning the flap, preoperative application of the cists, and the complete closure of the wound with a split skin graft over the donor site and open area of the pedicle

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FROM THE PRESIDENT OF THE A M A

We should above all look to our own house and see that it is in order. As practitioners of medicine we have dedicated ourselves to the service of humanity. We should remember this at all times and in our private and public acts hold that thought as a torch before us. The forces that threaten the free world and that are attempting to undermine our institutions cannot be turned back by the power of armed might alone. Before they can destroy us they must corrupt us and weaken our moral fiber. We as physicians have an important part to play at this time of doubt and fert by maintaining and extending the health resources of our country. The problems that confront us we can solve if we have good will and if we rededicate ourselves to the high ideals of medicine. It is necessary that we solve them within the framework of our democracy so that our nation and its people may be strengthened and can meet with a united and resolute force the dangers that threaten us

⁻WALTER B MARTIN M D

in Journal of the Ame ican Medical Associat on P 807 June 26 1954

THE NATURAL COURSE OF ACUTE NONSPECIFIC PERICARDITIS

DAVID B CARMICHAEL L t na t (MC) USN

ACUTE nonspectific pericarditis has become a distinct clinical entity since it was described in 1942 by Barnes and Burchell The characteristics have been extensively reviewed and the clinical diagnosis is now made frequently and accurately

Interest in the possibility of late effects following acute non specific pencarditis logically stems from two sources the hope that study of late effects will afford some further insight into the cause and fundamental nature of the acute disease and continued interest in the cause of chronic constrictive pericarditis

The following characteristics may be said to describe the natural course (1) It is a benign disease (2) recurrences are frequent, (3) late chest pain is common (4) constrictive pen carditis is apparently not a late complication and (5) the electrocardingram may show persistent abnormalities

A gratifying characteristic of this condition is its benigm nature. Many authors have labeled it acute benigm pencarditationing this attribute into consideration. When the diagnosis is established clinicians have the happy opportunity of informing an anxious family that the heart attack so closely resembling acute myocardial infarction was really a sheep in wolf's clothing.

One fatality has been reported In 1951 McCord and Taguch reported the case of a 52 year old white man who developed a pencardial friction rub on the third day of an illness character ized by antenor chest pain Paroxysmal tachycardia occurred on two occasions and on the twelfth day shock supervened When apparently improving on the fourteenth day the patient suddenly collapsed and died lie had received heparin and bishydroy coumann (dicumarol) throughout the course of his illness and the prothrombin time had been maintained below 25 percent of normal Autopsy revealed bilateral pleural effusion and a hemorthagic thickened adherent pericardium with 150 cc free blood in loculated areas in the pencardial cavity Microscopic examination

F m 11 S. N val Hosp tal Sa D so Calif

demonstrated a heavy infiltrate of lymphocytes, proliferation of fibroblastic tissue into the fibrin and clotted blood, and some separation and fragmentation of cardiac muscle fibers in areas where the thickened pericardium was directly contiguous Reflection on this case in view of the report of Goldstein and Wolff' of hemorrhagic pericarditis during bishydroxycoumann therapy leads one to wonder if this may not have actually been the process in this instance

Other reports have described patients critically ill during the acute phase of the illness, but in all recovery occurred eventually It is a safe conclusion that the prognosis for life is excellent.

Recurrences of acute nonspecific pencardits are frequent. This characteristic led Burchell* to use the term "acute relapsing pericarditis" and articles on this phenomenon have appeared in both the foreign and American literature Tomlin and associates reported on a patient who had 19 recurrences. Table 1 lists the incidence of recurrences in patients in some of the larger series not specifically dealing with this characteristic Recurrences occurred in six out of 28 patients observed in this hospital and in the U S Naval Hospital Great Lakes, Ill

For several years following the acute illness a large number of patients will complain of transient bouts of sharp, stabbing pain in the left side of the chest or in the shoulder Less commonly, the location is substemal and differentiation from angina pectoris may be difficult in general, the pain following perications into necessarily related to effort, but is aggravated by deep inspiration, is unaccompanied by dyspine and is unaffected by nitroglycenn. The mechanism of production of the pain is not known.

All available studies indicate that constrictive pericardits and a late complication of acute nonspecific pericardits. Many patients have been followed into the second and third decades after the original illness and I am aware of no case of chronic constrictive pericardits occurring in this large group. Three case reports, however ment special attention.

CASES REPORTED IN THE LITERATURE

In 1951 we' reported a 54-year old woman in whom a diagnosis of acute nonspectic perteardits had been made in 1946 Fluoroscopic findings and mentgenograms of the chest at that time were considered to be within the range of normal, but four years later diminished amplitude of pulsations of the apical region was noted. Roentgenographic examinations revealed enlargement in the region of the left ventricle and a ring of calcium surrounding the apex of the heart. No findings of cardiac compression were present and the patient was not incapacitated

In 1952 Freilich reported the case of a 52-year old man who was considered to have recurrent acute nonspecific hencarditis on five occasions Roentgenographic and electrokymographic evidence deemed compatible with fibrosis or adhesive pericar ditis was obtained Although no findings of cardiac compression were observed the author suggested that this was a midpoint in the development of constrictive pencarditis and on the basis of this case suggested that acute nonspecific pencarditis be considered one of the precursors of the more senous chronic con strictive nericarditis

TABLE 1 1 d f curre sof ut per cad tis

A thor	Nobe f	Numbe f uren	Per en
R en wand Cro	4	0	0.0
B rch 11	43	4	93
Camchid so	41	4	97
L ty and P 12	27	3	111
Glly and so t 15	9	1	111
Вп	13	2	153
Log dV dk	17	3	176
Dow d ocus 19	4	1	250
Cr and Chal 20	11] ,	27 3
Goy tt ²¹	40	13	32.5
Fde d	5	2	40.0
E	11	5	45 4
P es	28	6	21 4
Tot 1	253	47	18.6

Pabiner and associates recently reported the case of a 40 yearold man who entered the hospital with massive pencardial effu sion necessitating three pencardial taps. Because of continuing signs of cardiac compression a pericardiectomy was performed two and one-half months after he initially came under observation Several a pects of this case suggested a tuberculous cause and, in fact, the patient received 29 days of combined isoniazid (n) drazid) and streptomy cin therapy prior to operation. Sections of the tissue removed at operation revealed no specific changes

Two facts cannot be di puted (1) occasional cases of chronic constrictive pencarditis relate a history of an illness earlier in life uggestive of acute pencarditis or acute pleuntis and (') the cause of chronic constrictive pericarditie is often in doubt

These facts, however, do not warrant a conclusion of cause and effect Analysis of the case reports reveals that in nearly every instance signs of cardiac compression followed closely on the heels of the acute pencarditis This sequence does not conform to results documented in the many large series of acute nonspecific pencarditis

Changes have been observed in the electrocardiograms several years after the acute illness in several instances. In five of 41 nationts changes not explained on the basis of other neart disease were observed 6 Others have reported similar findings and Furman described the case of a physician three years after his acute ill ness who demonstrated residual coving of T waves in leads II. III and V. Godfrey 10 reported residual abnormalities, and Goverte11 recounted one patient in his recent group in whom the electrocardiographic findings were abnormal at the time of discharge Residual scarring of the subepicardial myocardium cou nled with some pericardial thickening may prove to be the cause of these changes

SUMMARY

The natural course of acute nonspecific pencardius includes the following characteristics benign nature, tendency to recur rences late chest pain, lack of relationship to chronic constric tive pencarditis, and occasional late electrocardiographic changes

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MANAGEMENT OF THE FLDERLY PATIENT

Unfortunately many medical men have as yet not grasped the technic of the management of the elderly patient. Many do not care to give the attention necessary for good medical treatment. Our schools certainly are partially at fault for not having seen the handwriting on the wall and recognizing the need for courses specially designed to instruct the medical student in the proper care of the older patient. The need for the development of a proper psychologic approach to the elderly patient s illness is of much greater importance than the knowledge of what to do for his failing heart. To tell a patient he has hardening of the arteries that his dizziness comes from old age that he cannot hope to be much better and that he will have to learn to live with his sickness serves no purpose but to make his last days more miserable and increase the practice of the other physici n who is called in and offers lots of hope and encouragement along with appropriate scientific management. This may seem a bit exaggerated but I can assure you it is all too often a fact and the general practitioners are not always to blame It is too bad that some of the leaders in our profession are so absorbed in the scientific management of the patient's illness that they forget entirely to treat him as a personality

-A HAZEN PRICE M D Hp Hptal Bll ton p 168 Sep -Oct 1954

A NAVAL RECRUIT ATTITUDE TEST

HERMAN B MOLISH Commander (MSC) USNR

THE DEVELOPMENT of a projective test specifically aimed at measuring various attitudes of young naval recruits toward the sundry problems of adjustment to military life is considered essential

Although the usual psychiatric screening of naval recruits on their arrival at this training station has been effective in delin eating the most evident character disorders, psychotic disturbances, and psychoneuroses, the necessary brevity of such exam ination by the psychiatrists could not be aimed at determining how the various components of a particular personality structure would manifest themselves in attitudes toward military life For ex ample during this brief psychiatric screening the general impression of a passive dependent personality structure may be quite evident However, the manner in which this character structure might interfere with an adequate adjustment to recruit training would be difficult to assess Would the problem of adjustment finally appear in homesickness of an acute nature? What was the motivating force, conscious or unconscious, for a particular youth s enlistment in the Navy? How would be react to authority? What would be his role in a highly masculine competitive environ ment, and what would be the effect of military life upon his self concept in his interpersonal relations with both his military and civilian neers?

The primary rationale of the construction of the Naval Recruit Attaude Test, to be described was an attempt to reasure, and possibly predict the area of conflict which may occur in the ad justment to routine naval recruit training. Let us consider our hypothetical passive-dependent recruit. In what area of adjustment to military life will the greatest conflict, if any, occur? Homesickness may be acute and, if not the cryptic nostalgic type, it may subside A much more serious conflict may occur in relation to his doubt of his self adequacy and masculinity. He may begin to display ruminative guilt feelings about his enlistment if it was against the advice of his parents. His reaction to authority may be extremely threatening to his self esteem, and result in ruminative doubt as to his ability to learn On the other hand, despite all the initial evidence of passive dependency which he may pre-

From U.S. N. val. Train. g. Station. B. inbridge. Md. Comde. Molish is now a signed to U.S. Naval. H. pital. Bech. ada, Md.

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ent his over all adjustment may be worked through with a mini mal amount of conflict Furthermore the degree and quality of such conflicts and the ego defenses used to resolve them are of



Figu 1 (cards 1 through 5) The motivation for el tment

importance in determining the adequacy of a recruit for continued naval service Thus the construction of the test was aimed at measuring the exact areas of conflict affected in adjustment to recruit training

The present test figures were drawn in the training aids section of this naval training center. The scenes were depicted from a written description which I had submitted Because the present form of the test is considered experimental the test figures were reproduced from the originals by a simple duplicating process

THE PRESENT TEST SERIES

In the present experimental form of the test there are 26 pic tures Unlike other thematic apperception tests 1 2 these pictures are built entirely around the recruit training situation and the areas in which possible conflict may arise in adjustment to it The pictures are grouped in such order that several successive cards aim at the uncovering of attitudes and areas of conflict in the various situations which arise in routine recruit training. The pictures are presented in serial order from 1 through 26. This order follows closely the sequence of events in a recruit's daily adjustment in training from the time he contemplates enlistment (card 1) to the time he completes his training and goes aboard a ship (card 25)



Figure 2 (cards 6 through 10) The reaction to military life series.

The series of 26 cards is grouped in such order that several successive cards are directed at the uncovering of attitudes and conflicts in a particular phase of recruit training

Cards 1 through 5 (fig. 1) are concerned with motivation for calistment, reaction of parents to enlistrent, and numerous facets of the interaction between the recruit and his parents in respect to his separation from the family

The initial reactions to military life from the first incident of imposed authority (the regulation haircut) to the effects of separation from the family (homesickness) are illustrated in cards 6 through 10 (fig. 2)

In cards 11 through 14 (fig. 3) attitudes toward military discipline and reactions to authority in a military setting are investigated. Cards 15 through 18 (fig 4) are designed to measure aspects of the self concept in competitive masculine roles and to detect



Figure 3 (a ds 11 th o gh 14) The a thor ty se i

Cards 19 through 22 (fig 5) were primarily formulated to uncover conflicts within the sexual sphere guilt, phobic mechanisms and masculinity forministy conflicts. The model for card 21 is 13MF in the Murray Thematic Apperception Test. The male figure has been drawn in naval uniform. The introduction of the family portrait on the wall attempts to uncover guilt feelings in respect to the mother and father. Cards 23 and 24 (fig 6) investigate the recruits adjustment to his peers in civilian life, and cards 25 and 26 (fig 7) study his orientation toward the naval service, his attitudes and conflicts concerning sea duty, and his reactions to stress in combat



Figu e 4 (cards 15 thro gh 18) The masculinity series.

Fach successive card in a particular senes centers about the various "armatures of daily adjustment to routine training, and each is designed to be more anxiety provoling than its predecessor. Thus, in the authority series (cards 11 through 14) the subject is faced with ever increasing threat in card 11, the company commander is berating the eather company. In card 12, an individual recruit is being berated for some infraction of regulations.

Conflict increases in card 13 where the recruit is faced with a Captain's mast. Finally in card 14 he is confined to the bng.



Figure 5 (cards 19 through 22) Th b ter exuladi tment eri s.

It was hoped that such a method of presentation would enable us to evaluate the severity of the recruit's reaction under an ever increasing and prolonged intensification of the threatening sum uii. The defenses of the ego which are mustered to cope with the ever increasing conflict and their successes of failures could then be determined Furthermore each of the amatures of adjustment could be qualitatively examined by this method and evaluated in reference to their importance in predicting success of failure in adjustment to naval life Also the total over all reac





Figure 6 (cards 23 and 24) The civilian adjustment series.

tion of a recruit could be assessed by his response throughout the entire test series. This in itself would contribute much to an understanding of the total personality structure and how much of a psychiatric hazard might be expected with continued naval service

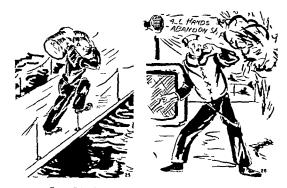


Figure 7 (cards 25 and 26) The reaction to combat series.

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METHOD OF ADMINISTRATION

The test can be given either individually or in a group of any size. The group administration of the test is accomplished by projecting the test figures on a screen with an opaque projector. The cards are presented in order from 1 through 26 and each is exposed for five minutes. The responses of each subject are written in a prepared booklet. The following instructions are given.

In this test you will be shown a series of cards projected upon a screen This test tells a story of a young man just like yourself and the experiences he meets from the time he decided to enlist in the Navy until he goes aboard ship Your task is to write a story about each of the cards shown to you. In each of these stories be sure to describe what is happening in the picture what the young man feels and thinks about the situation he is in and what the final outcome will be You will be allowed five munities for each card

SOME REPRESENTATIVE PROTOCOLS

The following excerpts from the protocols of the recruits have been selected to demonstrate the value of the Naval Recruit Attaide Test in disclosing various attitudes toward naval recruit training

For the sake of companion the protocols selected are those of a recruit (subject A) who eventually was discharged from the naval service by reason of inaptitude and with the diagnosis of "schizoid personality" and those of subject B who completed recruit training without any apparent difficulty

SUBJECT A

In subject A conflict centered about his enlistment is revealed in his associations to cards 1 2 and 3

Card 1 One time there was a fellow who went downtown to get some clothes and to his wonder there was a sign that said Join the Navy Like any other ordinary fellow he inquired about it The man a recruiter talked him into joining for as of now he didn't know whatever made him sign up. He should have thought twice. He sometimes prays to God that he should have stayed our. For it is written. That I would do I would not do and that that I would not do. I would not do.

Card 2. His grandfather told him he could go if he wanted to but I don't think you dilke it and are ready for it yet. Now that time has passed I think of these words as if to hear him again. Now I wished that I had listened I won't doubt his words again as long as I may live. It pays to listen to a per son with experience than to experiment on yourself.

Cord 3 "Son I don t want you to get into something like that as of yet, because you know you can t stand anyone hollering at you all the time It makes you nervous and you know that you lose your temper and do things you don t mean to do Maybe you are mixed up or something Now I know I m mixed up I can t take orders straight and hear it "And besides you d have to finish school because I want you to Don t do those foolish things.—they Il get you sooner or later

Psychiatric evaluation of the recruit indicated the following pertinent facts concerning his enlistment. The psychiatric examiner expressed the opinion that this recruit "joined the Navy some what impulsively probably because he was unhappy after his mother's remarriage was not getting along with his grandfather and was dissatisfied with the drab reality of his home situation compared to that of his dreams. He enlisted in the Navy "For completion of my high school education and the pleasure" At the time of his initial examination he expressed what the psychiatrist described as an inappropriate desire to be a chaplain. At the same time the recruit reported he was bothered with nervousness and he felt he would have trouble making a good adjustment to the service.

His reaction to card 2, in which the grandfather is given the substitute role of the father, is borne out by the actual findings in the personal history. The recruit sparents were separated when he was six years of age. He then lived in several foster homes and on four separate occasions with his grandfather. He had continual difficulty in adjusting to the foster home situations and also felt that his grandfather did not approve of him. His grandfather told him that I am different from all my brothers. He says I am sneaky and untidy! I ll walk out if I get mad, and I can t stand to be hollered at or nothing.

In card 3 the critical attitude of the recruit's mother toward his enlistment is of import. The past personal history indicated that he continually blamed his mother for the separation from his father. He gradually withdrew from the mother, and when she remarried he could not get along with the stepfather. When the mother remarried a third time, he refused to live with her, saving I only wanted one father.

In cards 8, 9, and 10 are portrayed intense feelings of isolation and moodiness Feelings of almost paranoid martyrdom are emphasized in his expressions of "A man crying to himself in his own torture" "You feel like a prisoner of destiny"

Psychiatric evaluation noted that this recruit had been intermittently depressed and considered suicide during his teen years lie had always been seclusive and preoccupied with grandiose ideas of what he would like to be In his daydreams, he planned

to go to college and become a doctor or a world history teacher. The moodiness and preoccupation expressed in these three cards is also corroborated by the company commander is report of the recruit's progress. This man is moody and hard to observe He is unclean and tries to run everyone. He is sad and depressed and doesn't seem to be able to do anything right no matter how much instruction he is given.

In cards 11 12 and 13 not only the intense reaction to author ity is noted but the paranoid suspiciousness and martyrlike atta tude are expressed

Cord 11 What s he beefing about? This is a man's first mistake I just can take it What am I going to do? God give me strength to get our of this place What am I? A dog to be bitten by a man? This mistake he hollers at you about may mean reassignment or retraining and you can't take that not after all these weeks—ph no?

Cord 12 Leave me alone I said to myself Why pick on me? The other fellows are worse than I I asked him how I stand in the company and he said you re one of the best boys in the company But does he think I believe that when I read his eyes that said. Turn your back and you are a dead goner. It set true he did strike me like a cobra strikes at a mongoose of human. He looks harmless but noison as fast.

Card 13 I did have some duty clothes in my locker the first week I just didn't understand the procedure on this So he takes me to battalion mast I could see the laughter in his eves—alaugh of what I don't know

In actual interviews with the psychiatrist, this paranoid suspiciousness was ventilated by the recruit. The fellows in the company are two-faced. They will stably out in the back. I can texplain it.

The recruit s adjustment was totally unsatisfactory llis progress in training was poor he often argued and picked fights with his shipmates and responded to orders poorly and with resentment. He accumulated 25 demerits for deficiencies in his personal by tione and continued even after reprimand to be objectionably dirty and untidy. The psychiatric opinion was that an adjustment to the naval service was impossible in view of his seclusive opercentric manner of relating to people and his attempt to compensate for his internal unhappiness by immature and beisterous behavior.

The culmination of all the conflicts expressed by this recruit is adequately portrayed in cards 95 and 26 which uncover the real threat that sea dut, and combat situations would present to him

Cord 25 I couldn't stand all that water It would run me crazy The place would make me feel crowded inside I wouldn't like the sea I can't take the Navy now It's heart breaking but I just can't.

Cord 26 I would be nervous and scared of death anyway I d probably go overboard I can swim but a person can last so long in one place at a certain time he must move The sea is for somebody he can take it like boot camp

SUBJECT B

This is a 17 year old recruit who completed his recruit training without apparent difficulty. His associations to the same cards discussed in the case of subject A are presented below for comparison.

Cord 1 He thinks it over seriously trying to cover all the angles. He wonders if he will like it since so much time is spent at sea. He thinks he would like the life but is a little shy about finding out the details from the recruiting officer. He thinks of what he has accomplished in the way of a vocation. He sees possible success in a Navy career, and finally decides to enter the office and secure all the information he can obtain on the new adventure.

Cord 2 He takes home information on the Navy to show his parents. His father is rather dubious of the idea at first but is reluctant to influence his son either way. He sees good points and bad points and finally tells his son that the decision is up to him to make since he is now a man.

Card 3 His mother is also informed of his intentions With his mother the boy has a more difficult job in getting his other parent s mind open to the idea. His mother is more emotional than his father and be cannot talk man to-man with her. He doesn't want to leave home, but he cannot continue to remain a dependent. Although it is a difficult decision after the talk with his mother, he sticks to his first decision.

Cord 8 The first day was a long one but it finally is time for bed He is not too sleep; and many thoughts run through his mind He wonders if it was wise and if it is what he really wants He thinks about his folks and finally drops off to sleep wondering what will happen next

Card 9 He meets many new fellows and for a time he forgets all about home But after a while when the newness of the hife wears off somewhat he begins to think of home his folks and his friends He soon finds himself wishing he were home and he is not in the happy mood his friends are in Cord 10 He stands watch frequently and this gives him more time than ever to think. He is beginning to realize there is more to the Navy than he thought This watch business is something new to him He finds it hard to stay up practically all night after being used to plenty of sleep while at home He also realizes however that this is part of his training and it will benefit him later on.

Cord 11 He gets his first taste of Navy discipline He finds that Navy chiefs are not to be trifled with. He also finds that it doesn't pay to be impudent disrespectful or thick headed While he and his shipmates stand at attention their commander hurls invectives right and left. He decides to learn the right way to do things and escapes being chewed out

Cord 12 He tree hard to do everything according to instructions but somehow or other he slips up. He did not mean to do wrong but there it is. He receives a severe tongue lashing from the company commander and feels like two cents for the rest of the day. He again resolves to learn one way or the other.

Card 13 He is brought before the captain to receive punishment for his misdemeanor. He feels terrible and wonders what they will do with him. All the while the company commander tells him about it

Cord 26 After he returns from leave he is reassigned to a ship On his first voyage the ship is hit by the enemy and the order to abandon ship is given. He is terrified for a moment but his training saves him, and he is saved

It should be emphasized that nothing is known at this time about this recruit s adjustment to the naval service beyond the penod of recruit training. Although there are conflicts noted in some of his associations the fact remains that he comploted his recruit training without apparent difficulty. In spite of his rather passively dependent attitude his homesickness and his over sensitivity to criticism by authority he was able to make the initial adjustment to naval service.

SUMMARY

The primary objective of this article is to introduce the experimental form of a thematic apperception test which is unique in its construction and senal order of presentation Some modification of the Thematic Apperception Test has already been applied by Briggs in assessing naval personnel. The Naval Recruit Attudie Test however has been specifically constructed for the recruit training situation as an attempt to apply a projective technic to the measurement of the vanous areas of conflict experienced by recruits in adjusting to routine training

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The present test employs what is believed a second while sentation of cards centered about the various and by successively increasing the senting of the stimuli, the reaction to ever morning a

At the present time, standardization process of about 2,000 recruits virous training without sensors difficulty. These times was selected because after one view tunity to have experienced most of the target who were discharged from the naval version ability are also available for companying phase of the research will be present.

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SICKLE CELL AF.

The abnormal hemoglobin in indiving crystallizes on deoxygenation Crystallize within erythrocytes produces relative spiculate forms which pass with more zero, than do normal cells. It has been detricant increase in the viscosity of 61 possickled as compared with oxygenated normal shape. Increased viscosity of flow and tends to produce capillize sequestration of red cells in the zero blood causes hypoxia and hypoxia; the sickling process.

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CARE OF DISABLED VETERANS

BENNIE A MOXNESS C Ion 1 USAF (MC)

M EDICAL care and financial relief of the disabled veteran has been of concern to our country since the earliest colonial period Likewise the care of the poor, ill or injured soldiers and sailors who served in the various wars have been a concern of European countries for several centuries. In a brief resume of the problem it is sometimes difficult to differ entiate between benefits granted to the men who were disabled may and those benefits conferred in general pension legislation.

In England after the decay of the Feudal system when amuse were demobilized or when soldiers and sailors were discharged because of disabilities there was nothing that these men could do to earn a livelihood. Thus they became penniless often becoming beggars vagabonds and criminals. Many of them found refuge in the monasteries but when the monasteries disappeared the penniless veterans had no place in which to obtain shelter and food Problems such as these led to the passage of national relief acts for soldiers by parliamentary session in England as early as 1592-159. The original act of 1592-1593 provided that the expenses of this relief was to be defrayed by local taxation of the parishes Later laws of course extended benefits to naval and other changes occurred as the years went by

AMERICAN COLONIAL PERIOD

The English colonies in America introduced pension systems for disabled veterans almost at the beginning of the colonization. The pilgrims enacted a law as early as 1636 at Plymouth which provided that any man sent forth as a soldier and returned maimed should be maintained completely by the colony during life. The Virginia Assembly in 1644 provided for disability and later added relief of indigent families of soldiers killed or disabled Maryland in 1675 promised yearly pensions to disabled soldiers and to the vidors and orphans of those who lost their lives in military service. In 1691 New York provided that any person who was disabled or wounded in the military service should be cured and maintained out of public revenue. By 1718 Rhode Island provided that every officer soldier or cailor in the colony's service who was disabled should have his wounds looked after and healed at the colony's charge and should be given a pension sufficient

to maintain himself and dependent relatives. If the man was slain, his dependents were to be maintained by a vearly pension while unable to provide for themselves.²

THE NATIONAL PENSION LAWS

The pension system of the United States is said to have criinally been based on the precedent and experience of the kn_lish and American Colonial governments. It is interesting to note that the Continental Congress first promised pensions to encourage enlistments in the Continental army and to prevent desertions and resignations from the army in critical times. They probably pre vented the dissolution of the army and the loss of the hevelu tionary War In all these cases the administration and payments of pensions were, of necessity left to the states as the Centi nental Congress had no real executive power and no fund: with which to make these payments Congress first promined invalid pensions on 26 August 1776 to officers and men of the Conti nental army and navy who lost a limb or were otherwise disalled in the Revolutionary War This invalid pen don amounted to caehalf pay during life or continuance of disability those who were not totally disabled received an adequate monthly rention not to exceed one-half of their pay Various constructional acts enlarged the provisions for invalid pensions and extended them to those members who served in the Har of 1811 'I ater logical lation such as the Act of 1 May 1810 made provision for pen sioning volunteers who were wounded or otherwise desalted in the service in the Morican War The national pendon laws of the United States covering service in wars pilot to 1 March 1811 were called old war ponsions and fer convenience may be divided into three classes namels (a) incolad rensums based on wounds or injuries received, or discuss a contracted in the course of duty (b) vertice pensions and (c) land course so both granted for service are spective of injuries

Originally the land front warrants were part of the contract of enlistment but later have greated after nelitary service was completed permitted the boun of these warrants as math the Land grants were first node by the Contractal Commons from 1776-1788 and the last net which granted bounts land grants was approved 3 March 18

For services rendered in the Civil War (1881-1885) in the Linke States Army or Navy or their various banches too Lin previous two distinct systems of penalous. The ameral law trains previous for wounds or injuries received or control of control of the service in line of duty. The penalous trains from a law dollars per month. The other or specific after the service and amending act grant discussions.

broad, and with certain exceptions such as entitlement to certain

broad, and with certain exceptions such as entitlement to certain benefits organizational structures and administrative procedures the Veterans Administration was left free to define and develop the medical services which constituted complete medical and hospital service

FUTURE PROGRAMS

It is of course difficult to predict the future benefit and service programs for veterans It is important that any present and future programs for disabled ex servicemen remain flexible for flex ibility will permit the addition of new programs or modification or discontinuance of existing programs as present and future requirements demand Historians could no doubt further remind us that some commanders of armies in past wars were concerned with the emotional stability of recruits and the mental disabilities of their soldiers, but it does not appear that these problems were ever of such importance as they are in modern war Probably their importance in World War I and later conflicts is a reflection of the complexity and intensity of modern wars which involve the total manpower of nations Mental health is now of great importance to the fighting forces and psychiatric casualties rank high in comparison with those due to epidemics and infections, which were more prominent in previous wars but are now more effectively controlled

The objective of a program for rehabilitation of the disabled veteran may therefore not be too unlike any other program for restoration of the physically handicapped person. This type of program would consider rehabilitation of the individual to the best physical mental social and vocational usefulness of which he is capable. As was apily stated in a recent editorial. It is all a part of the social consciousness that dawning on the world nearly 2000 years ago became evident as a great moral force in modern life in the early part of the nineteenth century.

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UNITY, PEACE, AND CONCORD

WILLIAM OSLER M D F R S

N THIS occasion I have had no difficulty in selecting a subject on which to address you Surely the hour is not for the head but for the heart, out of the abundance of which I may be able to express, however feebly, my gratitude for the many kindnesses I have received from the profession of this country during the past 21 years, and from you, my dear col leagues of this state and city, during the 16 years I have dwelt among you Truly I can say that I have lived my life in our beloved profession-perhaps too much! but whatever success I have had has come directly through it, and my devotion is only natural Few men have had more from their colleagues than has fallen to my lot As an untried young man my appointment at McGill College came directly through friends in the faculty who had confidence in me as a student In the 10 happy years I lived in Montreal I saw little of any save physicians and students among whom I was satisfied to work-and to play In Phila delphia the hospitals and the societies absorbed the greater part of my time, and I lived the peaceful life of a student with students An ever widening circle of friends in the profession brought me into closer contact with the public but I have never departed from my ambition to be first of all a servant of my brethren, willing and anxious to do anything in my power to help them Of my life here you all know I have studied to be quiet and to do my own business and to walk honestly toward them that are without, and one of my chief pleasures has been to work among you as a friend, sharing actively in your manifold labors But when to the sessions of sweet, silent thought I

w Olrs far will to the med cal prof ss n of the United Stat Th ft 16 p od t ye t J has Hopk as Hos t l It w s p s t d 50 year ago in Bltm 6 April 1905 t the annual m ing f t V d cal md Chirumgical F culty of th Sta f Varyl d O ler s iled for E gland rw mo thal ter to become Rgus Pf r f Ned c t O ford Of this dur which w s fust published in th I urnal of the Arrencen Wed cal Association for 5 August 1905 the Nayland ted cal Journal d clared what he said core ming the motice which have led to hi e m val fr m Johns H pk is a good a nythi g O ler has said on my b-1 c O h d partur h B lumot Sun tep ried. This is the first tim in t h tory it to country tast c ll has cone f m y E glish Lu versity to ma f
in America E ry honor and very po bl mark f ffect on and e teem the git of his sociat and fri and is bready hi and no ton his bee If untured t show that thos with which he com in contact have preech ted Ik t g us of th gre t physic n ad th magnet c personal ty of wonderful w a. The phot graphs are from the collection of the Armed Forces Wede 1 L 'r y-En tor

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surmon up the past not what I have done but the many things I have left undone the opportunities I have neglected the battles I have shirked the precious hours I have wasted—these rise up



The photograph biled to her be normal Balt more shortly before Oler lift jh. Hipk. 1905 to become Right or f.M.d. me at O ford.

A notable period it has been in our history through which we have lived a period of reconstruction and ronovation a true remaissance not only an extraordinary rovival of learning but a corplete transformation in our educational methods and I take pride in the thought that in Philadelphia and in Baltimore I have had the good fortune to be closely associated with men

who have been zealous in the promotion of great reforms, the full value of which we are too close to the events to appreciate On the far reaching influence of these changes time will not permit us to dwell I propose to consider another aspect of our work of equal importance, neither scientific nor educational, but what may be called humanistic, as it deals with our mutual relations and with the public

Nothing in life is more glaring than the contrast between possibilities and actualities, between the ideal and the real By the ordinary mortal, idealists are regarded as vague dreamers, striving after the impossible, but in the history of the world how often have they gradually moulded to their will conditions the most adverse and hopeless! They alone furnish the Geist that finally animates the entire body and makes possible reforms and even revolutions Imponderable, impalpable, more often part of the moral than of the intellectual equipment, are the subtle qual ities so hard to define, yet so potent in everyday life, by which these fervent souls keep alive in us the reality of the ideal Even in a lost cause, with aspirations utterly futile, they refuse to acknowledge defeat, and, still nursing an unconquerable hope, send up the prayer of faith in face of a scoffing world Most characteristic of aspirations of this class is the petition of the Litany in which we pray that to the nations may be given "unity, peace, and concord " Century after century from the altars of Christendom this most beautiful of all prayers has risen from lins of men and women, from the loyal souls who have refused to recognize its hopelessness, with the war drums ever sounding in their ears. The desire for unity, the wish for peace, the long ing for concord, deeply implanted in the human heart, have stirred the most powerful emotions of the race, and have been responsi ble for some of its noblest actions It is but a sentiment, you may say but is not the world ruled by feeling and by passion? What but a strong sentiment baptized this nation in blood, and what but sentiment, the deep rooted affection for country which is so firmly implanted in the hearts of all Americans, gives to these states today unity, peace, and concord? As with the na tions at large, so with the nation in particular, as with people, so with individuals and as with our profession, so with its mem bers, this fine old prayer for unity, peace, and concord, if in our hearts as well as on our lips, reavel, and concour, it in aspirations What some of its lessons may be to us will be the subject of my address

UNITY

Medicine is the only world wide profession, following everywhere the same methods, actuated by the same ambitions, and pursuing the same ends. This homogeneity, its most character

istic feature is not shared by the law, and not by the Church. certainly not in the same degree While in antiquity the law rivals medicine there is not in it that extraordinary solidarity which makes the physician at home in any country in any place where two or three sons of men are gathered together Similar in its high aims and in the devotion of its officers the Christian Church, widespread as it is, and saturated with the humanitarian instincts of its Founder, yet lacks that catholicity-urbi et orbi-which enables the physician to practise the same art amid the same surroundings in every country of the earth. There is a unity, too in its aims-the prevention of diseases by discover ing their causes, and the cure and relief of sickness and suffer ing In a little more than a century a united profession working in many lands has done more for the race than has ever before been accomplished by any other body of men. So great have been these gifts that we have almost lost our appreciation of them Vaccination sanitation anaesthesia antiseptic surgery the new science of bacteriology and the new art in therapeutics have effected a revolution in our civilization to which can be compared only the extraordinary progress in the mechanical arts Over the latter there is this supreme advantage it is domestic-a bedroom revolution which sooner or later touches each one of us if not in person in those near and dear-a revolution which for the first time in the history of poor suffering humanity brings us appreciably closer to that promised day when the former things should pass away when there should be no more unnecessary death when sorrow and crying should be no more and there should not be any more pain

One often hears as a reproach that more has been done in the prevention than in the cure of disease. It is true but this second part of our labors has also made enormous progress he recog mize today the limitations of the art we know better the discases curable by medicine and those which yield to exercise and fresh air we have learned to realize the intricacy of the processes of disease and have refused to deceive ourselves with half knowledge preferring to wait for the day instead of groping blindly in the dark or losing our way in the twilight. The list of diseases which we can positively cure is an ever increasing one the number of diseases the course of which we can modify favorably is a growing one the number of incurable diseases (which is large and which will probably always be large) is di minishing-so that in this second point we may feel that not only is the work already done of the greatest importance but that we are on the right path and year by year as we know dis ease better we shall be able to treat it more successfully. The united efforts of countless workers in many lands have won these

greatest victories of science Only by ceaseless co-operation and the intelligent appreciation by all of the results obtained in each department has the present remarkable position been reached Within a week or 10 days a great discovery in any part of the world is known everywhere, and, while in a certain sense we speak of German, French, English, and American medicine, the differences are trifling in comparison with the general similarity The special workers know each other and are familiar



The Johns Hopkins Hosp tal 50 years ago uben Osler was "The Chief

with each other's studies in a way that is truly remarkable. And the knowledge gained by the one, or the special technic he may devise, or the instrument he may invent is at the immediate disposal of all A new lifesaving operation of the first class devised by a surgion in Breslau would be performed here the following week. A discovery in practical medicine is common property with the next issue of the weekly journals

A powerful stimulus in promoting this wide organic unity is our great international gatherings—not so much the International Congress of the profession, which has proved rather an unwieldy body, but of the special societies which are rapidly denational izing science in nearly every civilized country medical men have united in great associations which look after their interests and promote scientific work it should be a source of special pride to American physicians to feel that the national association of this country—the American Vedical Association—has become one of the largest and most influential bodies of the kind in the world We cannot be too grateful to men who have controlled its course during the past 10 years. The reorganization so efficiently

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carried out has necessitated a readjustment of the machiner, of the state societies and it is satisfactory to know that this meeting of our state society, the first held under the new conditions has proved so satisfactory. But in the whole scheme of readjustment nothing commands our sympathy and co-operation more than the making of the county societies the materials out of which the state and national associations are built. It is not easy at first to work out such a scheme in full detail, and I would ask of the members of this body not only their co-operation but an expectant consideration if the plan at first does not work as smoothly as could be desired. On the county members I would urge the support of a plan conceived on broad national lines—
on you its success dopends and to you its benefits will chiefly corre.

Linked together by the strong bonds of community of interests, the profession of medicine forms a remarkable world unit in the progressive evolution of which there is a fuller hope for humanity than in any other direction

Concentration fusion and consolidation are welding together various subunits in each nation Much has been done much remains to do and to three desiderata I may refer briefly

In this country reciprocity between the state licensing boards remains one of the most urgent local needs Given similar re quirements and examinations practically of the same character, with evidence of good character, the state board should be given power to register a man on payment of the usual fee It is preposterous to restrict in his own country as is now done a physician's liberty. Take a case in point A few months ago a man who is registered in three states an able canable practitioner of 90 years standing a hard student in his profession a physician who has had charge of some of the most important lives of this country had to undergo another examination for licence What an anomaly! What a reflection on a united profession! I would urge you all most strongly to support the movement now in progress to place reciprocity on a proper basis International reciprocity 18 another question of equal importance but surrounded with greater difficulties and though a long way off it will come within this century

The second urgent need is a consolidation of many of our medical schools Within the past 25 years conditions have so changed that the tax on the men in charge of the unendowed schools has become ever more burdensome. In the old days of a faculty with seven professors a school with 300 students was a good proporty paying large salaries but the introduction of laboratory and practical teaching has so increased the expenses

that very little is now left for distribution at the end of the year. The students fees have not increased proportionately, and only the self sacrifice and devotion of men who ungrudgingly give their time, and often their means, save a hopeless situation. A fusion of the schools is the natural solution of the problem. Take a concrete example. A union of three of the medical schools of this city would enable the scientific departments to be consolidated at an enormous saving of expense and with a corresponding



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A land-a k fo "5 year Osler tome a the come of Chales and Farkl n Sir et n Ball mor us a sid soon after he roed out on 16 May 1905 An a arthent or occup es the se

increase in efficiency \natory physiology pathology, physiologic chemistry, bacteriology, and pharmacology could be taught in separately organized departments which the funds of the united school could support liberally. Such a school could appeal to the public for aid to build and erdory suitable laboratories. The clinical work could be carried on at the separate hospitals which would afford unequaled facilities for the scientific study of disease \text{\text{ot}} out in this city but in Richmond, in \ashville, in Columbus, in Indianapolis, and in many cities a "merger" is

needed Even the larger schools of the larger cities could pool" their scientific interests to the great advantage of the profession

And the third desideratum is the recognition by our homeopathic brethren that the door is open. It is too late in this day of scientific medicine to prattle of such antique nonsense as is indicated in the "pathies" We have long got past the stage when any system" can satisfy a rational practitioner long past the time when a difference of belief in the action of drugs-the most uncertain element in our art'-should be allowed to separate men with the same noble traditions the same hopes the same aims and ambitions. It is not as if our homeopathic brothers are asleep far from it they are awake-many of them at any rateto the importance of the scientific study of disease, and all of them must realize the anomaly of their position. It is distressing to think that so many good men live isolated, in a measure from the great body of the profession. The original grievous mistake was ours-to quarrel with our brothers over infinitesimals was a most unwise and stupid thing to do That we quarrel with them now is solely on account of the old Shibboleth under which they practice Homeopathy is as inconsistent with the new medicine as is the old fashioned polypharmacy to the destruction of which it contributed so much The rent in the robe of Aesculapius wider in this country than elsewhere could be repaired by mutual concessions-on the one hand by the abandonment of special designations and on the other by an intelligent toleration of therapeutic vagaries which in all ages have beset the profession but which have been mere flies on the wheels of progress

PEACE

Many seek peace few ensue it actively and among these few we alast are not often to be found. In one sense every one of us may be asked the question which Jehu returned to Joram What hast thou to do with peace?" since our life must be a perpetual warfare dominated by the fighting spirit. The phy sician like the Christian has three great foes-ignorance, which is sin apathy which is the world and vice which is the devil There is a delightful Arabian proverb two lines of which run "He that knows not and knows not that he knows not is a fool Shun him He that knows not, and knows that he knows not is simple Teach him " To a large extent these two classes represent the people with whom we have to deal Teach ing the simple and sufferin, the fools gladly we must fight the wilful ignorance of the one and the helpless ignorance of the other not with the sword of righteous indignation but with the skillful weapon of the tongue On this ignorance the charlatan and the quack live and it is by no means an easy matter to decide how best to conduct a warfare against these wily foes

the oldest and most formidable with whom we have to deal As the incomparable Fuller remarks "Well did the poets feigh Aesculapius and Circe brother and sister, for in all times (in the opinion of the multitude) witches, old women, and im postors have had a competition with doctors "Education of the public of a much more systematic and active kind is needed The congress on quackery which is announced to take place in Paris, with some 25 subjects for discussion, indicates one im portant method of dealing with the problem The remarkable exhibit held last year in Germany of everything relating to quacks and charlatans did an immense good in calling attention to the the colossal nature of the evil A permanent museum of this sort might well be organized in Washington in connection with the Department of Hygiene It might be worth while to imitate our German brethren in a special national exhibit, though I dare say many of the most notorious sinners would apply for large space, not willing to miss the opportunity for a free advertise ment! One effective measure is enforced in Germany any proprietary medicine sold to the public must be submitted to a gov ernment analyst who prepares a statement (as to its composition, the price of its ingredients et cetera) which is published at the cost of the owner of the supposed remedy in a certain number of the daily and weekly papers

By far the most dangerous foe we have to fight is apathyindifference from whatever cause, not from a lack of knowledge, but from carelessness, from absorption in other pursuits, from a contempt bred of self satisfaction Fully 25 percent of the deaths in the community are due to this accursed apathy. foster ing a human inefficiency, and going far to counterbalance the extraordinary achievements of the past century Why should we take pride in the wonderful railway system with which enter prise and energy have traversed the land, when the supreme law, the public health, is neglected? What comfort in the thought of a people enjoying great material prosperity when we know that the primary elements of life (on which even the old Romans were our masters) are denied to them? What consolation does the "little red school house" afford when we know that a Lethean apath, allows toll to be taken of every class, from the little tots to the youths and maidens? Western civilization has been born of knowledge, of knowledge won by hard, honest sweat of bod, and brain, but in many of the most important relations of life we have failed to make that knowledge effective And, strange from of life, the lesson of human efficiency is being taught us by one of the little nations of the earth, which has so far bettered our instruction that we must again turn eastward for wisdom Perhaps in a few years our civilization may be put on trial, and it will not be without benefit if it arouses the in

dividual from anathy and makes him conscious of the great truth that only by earnest individual human effort can knowled_e be made effective and if it arouses communities from an apathy which permits medieval conditions to prevail without a protest

Against our third great foe-vice in all its forms-we have to wate an incessant warfare which is not less vigorous be cause of the quiet silent kind Better than any one else the physician can say the word in season to the immoral to the interperate to the uncharitable in word and deed Personal impurity is the evil against which we can do most good par ticularly to the young by showing the possibility of the puro life and the dangers of immorality Had I time and were this the proper occasion I would life to rouse the profession to a sense of its responsibility toward the social evil-the black plague which devastates the land I can but call your attention to an important society of which Dr Prince Morrow of New York is the organizer which has for one of its objects the education of the public on this important question. I would urge you to join in a crusade quite as important as that in which we are en aged against tuberculosis

CONCORD

Unity promotes concord-community of interests the same aims the same objects give if anything can a feeling of com radeship and the active co-operation of many men while it favors friction lessens the chances of misunderstanding and ill vill One of the most gratifying features of our professional life i the good feeling which provails between the various sec tions of the country I do not see how it could be otherwise (no ha only to visit different parts and mingle with the men to appreciate that everywhere good work is being done every where an earnest desire to elevate the standard of education and everywhere the same self-sacrificing devotion on the part of the general practitioner Ven will tell you that commercialism is rife that the charlatan and the humbug were never so much in evidence and that in our ethical standards there has been a steady declen ion. These are the Flijahs who are always reads to pour out their complaints mourning that they are not better than their fathers bew men have had more favorable opportunities than I have had to gauge the actual conditions in professional private life in the schools and in the medical societies and as I have seen them in the past 20 years I am filled with thankfulness for the present and with hope for the future The little rift within the late is the absence in many places of that cordial professional harmony which should exist arong us In the larger cities professional jealousies are dving

out Read Charles Caldwell's Autobiography if you wish for spicy details of the quarrels of the doctors in this country during the first half of the last century I am sorry to say the professors have often been the worst offenders, and the rivalry between medical schools has not always been friendly and courteous That it still prevails to some extent must be acknowledged, but it is dying out, though not so rapidly as we could wish. It makes a very bad impression on the public, and is often a serious stumbling block in the way of progress Only the other day I had a letter from an intelligent and appreciative layman who is interested in a large hospital scheme about which I had been consulted I quote this sentence from it in sorrow, and I do so because it is written by a strong personal friend of the profes sion, a man who has had long and varied experience with us "I may say to you that one of the distressing bewilderments of the layman who only desires the working out of a broad plan is the extraordinary bitterness of professional jealousy between not only schoolmen and nonschoolmen, but between schoolmen themselves, and the reflections which are cast on one another as belonging to that clique, which makes it exceedingly difficult for the layman to understand what way there is out of these squabbles "

The national and special societies, and particularly the Ameri can Medical Association, have brought men together and have taught them to know each other and to appreciate the good points which at home may have been overlooked As Dr Brush said yesterday in his address, it is in the smaller towns and country districts that the conditions are most favorable for mutual misunderstandings. Only those of us who have been brought up in such surroundings can appreciate how hard it is for physicians to keep on good terms with each other The practice of medicine calls equally for the exercise of the heart and the head and when a man has done his best, to have his motives misunder stood and his conduct of a case harshly criticized not only by the family, but by a colleague who has been called in, small wonder, when the opportunity arises, if the old Adam prevails and he pays in kind So far as my observation goes there are three chief causes for the quarrels of doctors The first is lack of proper friendly intercourse, by which alone we can know each other It is the duty of the older man to look on the younger one who settles near him not as a rival, but as a son He will do to you just what you did to the old practitioner, when, as a young man, you started-get a good many of your cases, but if you have the sense to realize that this is inevitable, unavoid able and the way of the world, and if you have the sense to talk over, in a friendly way, the first delicate situation that

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arises, the difficulties will disappear and recutrences may be made impossible The young men should be tender with the sen sibilities of their seniors deferring to their judgment and taking counsel with them If young graduates could be taken more fre quently as assistants or partners the work of the profession would be much lightened and it would promote amity and good followship A man of whom you may have heard as the incar nation of unprofessional conduct, and who has been held up as an example of all that is pernicious may be in reality a very good fellow, the victim of petty jealousies the mark of the ar rows of a rival faction and you may, on acquaintance find that he loves his wife and is devoted to his children and that there are people who respect and esteem him After all the attitude of mind is the all important factor in the promotion of concord When a man is praised or when a young man has done a good bit of work in your special branch be thankful—it is for the common good Envy, that pain of the soul as Plato calls it should never for a moment afflict a man of generous instancts who has a same outlook in life The men of rival schools should deliberately cultivate the acquaintance of each other and en courage their students and the junior teachers to fraternize If you hear that a young fellow just starting has made mistakes or is a little off color "go out of your way to say a good word to him, or for him It is the only cure any other treatment only aggravates the malady

The second great cause is one over which we have direct control. The most widespread the most permicious of all vices equal in its disastrous effects to impurity, much more disastrous often than intemperance because destructive of all mental and moral nobility as are the others of bodily health is uncharitable ness-the most prevalent of modern sins, peculiarly apt to beset all of us and the chief enemy to concord in our ranks Often times it is a thoughtless evil a sort of tic or trick an uncon scious habit of mind and tongue which gradually takes posses sion of us to sooner is a man s name mentioned than something slighting is said of him, or a story is repeated which is to his disadvantage or the involuntary plight of a brother is ridiculed or even his character is traduced. In chronic and malign offend ers literally with every word a reputation dies a school is disparaged or the character of the work in a labor story is belittled or it may be only the faint praise that damns not the generous meed from a full and thankful heart We have lost our fine sense of the tragic element in this vice and of its debasing influence on the character. It is interesting that Christ and the Apostles lashed it more unsparingly than any other Who is there among us who does not require every day

to lay to heart that counsel of perfection "Judge not according to the appearance, but judge righteous judgment" One of the apostles of our profession, Sir Thomas Browne, has a great thought on the question

While thou so hotly disclaimest the devil, be not guilty of diabolism Fall not into one name with that unclean spirit nor act his nature whom thou so much abhorrest-that is accuse calumniate backbite whisper detract sinistrously interpret others Degenerous depravities narrow minded vices! not only below St Paul's noble Chris tian but Aristotle's true gentleman Trust not with some that the Epistle of St James is apocryphal and so read with less fear that stabbing truth that in company with this vice thy religion is in vain. Moses broke the tables without breaking the law but where charity is broke the law itself is shartered which cannot be whole without love which is the fulfilling of it Look humbly upon thy virtues and though thou art rich in some yet think thyself poor and naked without that crowning grace which thinketh no evil which envieth not which beareth, hopeth believeth endureth all things With these sure graces while busy tongues are crying out for a drop of cold water mutes may be in happiness and sing the Trisagion in heaven

And the third cause is the wagging tongue of others who are too often ready to tell tales and make trouble between physicians. There is only one safe rule—never listen to a patient who begins with a story about the carelessness and inefficiency of Dr. Blank. Shut him or her up with a snap knowing full well that the same tale may be told of you a few months later Fully half of the quarrels of physicians are fomented by the tittle-tattle of patients, and the only safeguard is not to listen. Sometimes it is impossible to check the flow of imprecation and slander and then apply the other rule—perfectly safe and one which may be commended as a good practice—never believe what a patient tells you to the detriment of a brother physician, even though you may think it to be true

To part from the profession of this country and from this old Faculty, which I have learned to love so dearly, is a great wrench one which I would feel more deeply were it not for the nearness of England, and for the confidence I feel that I am but going to work in another part of the same vineyard, and were it not for the hope that I shall continue to tike interest in your affairs and in the welfare of the medical school to which I owe so much It may be that in the hurry and bustle of a busy life I have given offence to sore—who can avoid it? Unwittingly I may have shot an arrow o er the house and hart a brother—if

so I am sorry and I ask his pardon. So far as I can read my heart I leave you in charity with all I have striven with none, not as Walter Savage Landor says because none was worth the strife, but because I have had a deep conviction of the hate fulness of strife of its uselessness of its disastrous effects and a still deeper conviction of the blessings that come with unity, peace, and concord And I would give to each of you, my brothers-you who hear me now, and to you who may elsewhere read my words—to you who do our greatest work laboring in cessantly for small rewards in towns and country places—to you the more favored ones who have special fields of work-to you teachers and professors and scientific workers-to one and all, through the length and breadth of the land-I give a single word as my parting commandment

It is not hidden from thee neither is it far off. It is not in heaven that thou shouldest say Who shall go up for us to heaven and bring it unto us that we may hear it and do it? Neither is it beyond the sea that thou shouldest say Who shall go over the sea for us and bring it unto us that we may hear it and do it? But the word is very nigh unto thee in thy mouth and in thy heart that thou mayest do it

FEAR IS CAUSED BY LACK OF KNOWLEDGE

The usual excuse or reason for not telling the patient when a diag nosis of cancer has been made is that the relatives the physician or both consider the shock too great for the patient to take In other words the patient is considered mentally incompetent to receive the diagnosis If that is true let us consider the morbidity and mortality of coronary occlusion. Coronary heart disease is common and is well known to the public of today It strikes suddenly If the individual is so fortunate as to survive the initial attack he lives under the con stant threat of another occlusion maybe fatal. Yet do the family and the doctor hesitate to tell him the truth? And when told does the patient go into some terrible mental collapse? No he doesn't because heart disease is common and people are familiar with it Nowadays cancer has become well known to the public through education and the blind fear of the word cancer has been di pelled Fear is caused by lack of knowledge

⁻F G H MALONEY M D 1 Wis onsi M d call mal p 544 Oct 1954



Clinicopathologic Conference

U S Naval Hospital Chelsea Mass *

EPISTAXIS FEVER AND CHEST PAIN

Summary of Clinical History A 57 year old man was admitted to the hospital complaining of pain in the right side of his chest

Five weeks before admission he noted the gradual onset of difficulty in breathing and of associated fleeting pain across the chest and in the shoulders. The pain became steady and persisted over the lower right side of the chest. Both wrists became sore but residual screness and swelling involved only the right wrist. Four weeks before admission he developed ancrexia, "gas pains," and a "flutter" in the upper part of the abdomen. Ten days before admission there was a sudden exacerbation of right-sided chest pain. It was sharp and made worse by deep breathing and coughing. A roentgonogram of the chest taken at another hospital showed blunting of the costophrenic angles due to old adhesions. Seven days before admission he began to cough and raised tenacious, mucoid sputum which was often blood streaked. There was associated weakness, malaise, chills, and temperature elevations as high as 101.

The past history revealed that upon retirement at the age of 50 he had had no significant physical defects Five years before this admission he had had an attack of psoriasis Nine months before admission, following excessive yuletide celebrations, he was admitted to another hospital with complaints of anorexia, insomnia, and a generalized dermatitis. He was given parenteral feedings, vitamins, and paraldehyde sedation, then transferred to a second hospital where the diagnosis of pellagra was made and vitamin therapy increased. His weight was usually 178 pounds but had fallen to 146 pounds. After discharge, he continued on a diet with supplementary vitamins, and felt improved He had had occasional nosebleeds and chronic atrophic rhinitis. About three weeks before admission, however, he began to have epistaxis more frequently. There were no cardiac manifestations.

Capt Chail T Stelle (NC) USN Commanding Officer From the Laboratory
Servic Lt H mry R Delancy Jr (NC) USN Chief

He had no food intolerance and had never had black stools. His alcohol make had probably been excessive

Physical Exemination. Co admission the patient weighed 155 pounds and appeared poorly nours hed and acutely all. There were bright red conjunctival hemorrhage and bilateral arcus seril. The names contained dark cruated blood No lymph nodes were palpable There was a pleural friction rub over the right anterplateral region of the che t and a pericardial friction rub was beard along the left sternal border There were a few fine non t rales at both lung ba e and a mall area of bronchovesicula, breathing po teriorly over the right upper lobe. The heart was not ellinged and no nursums were heard. The abdomen was _omewhat di tended bet no manes were pulpuble On the skin about the ankle there was a crusted scaling ervthematous erup tion The righ will twas slightly wollen and tender The reresirder of the examination was within normal limits

The temperature wa 93 6 F re piration 24 pulse 116 and the blood pre are 160 mm Hg sv tolic and 76 mm Hg diastolic

Leboratory Studies Repeated urinalyses revealed acid reactions specific gravitie o 1 000 to 1 012 albumin 20 to 60 mg per 100 ml and no sug. The ediments contained three to five while blood cell a few epithelial cells and amorphous crystals pe high power field. The hemoglobin was 12 5 grans per 100 ml. and the whise blood cell count wa 15 400 per cu mm with & price neutrophils if percent lymphocytes and one percent commonly. The err bilimbin was 0 s mg the nonprocein nitrom Enfing and creatinine 66 mg all per 100 ml prothombin ac ivit w. 6 percen of normal total potein was 0 (alonein 0 globelin 2 0) grams per 100 ml

On the third ho pital day a p tom culture contained Fried lander's breilli and the white blood cell count rose to 21 900 po en mm "epezad meare for acid fa t bacilli were negative The hemoglobin level h d fallen to 9 s grams per 100 ml. O the forth hospital das the blood mea nitrogen was 120 0 mg per 100 ml An initial row genogram of the che t was interpreted a. showing e entially clear lungs blunting of the right costophrenic angle by thickered plema and elight elevation of the night disphragm The bear was not enlarged Rosatgenogram of the chest two days I to however revealed nottling in the rimt upper lobe and hazing s in the left lung and at the left land bare Elecapeardiograms showed linus tuchycardia and first degree A 1 block with a P R interval of 0.22 second at a cardiac rate of 115 po minute. There was elevation of the S.T. segment in lead. V. V. and V. There was relatively low voltage. age in the sancard lead

Course in Hospital During the first two hospital days the part continued to cough up moderate amounts of tenacious, mund, bloody sputum The pleural and pericardial friction rubs resisted The right-sided chest pain decreased in severity ollowing the isolation of Friedlander's bacilli, medication was langed from 250 mg of tetracycline every six hours, to one am of streptomycin twice daily. Though his temperature never see above 100 F and he had no chills, his condition deterioted rapidly. On the sixth hospital day he became agitated and entally clouded The intake of food and fluids was difficult to introl. On the eighth hospital day he was discriented and much eaker. He died quietly without a dramatic change in the clinical purse.

DISCUSSION

Doctor Shaf an In summary this was a 57 year old man with a five eek history of a pleuritic type of pain epistaxis swelling of the rist and a seven-day history of low grade fever with cough productive f mucoid and blood streaked sputum. The physical findings were those f an acutely ill man with a temperature of 996° F a right pleural fiction rub a pericardial friction rub swelling and tenderness of the ight wrist and skin lesions on both legs. The urine showed a specific ravity that was fixed albuminumia and several white blood cells per ugh power field. He had a mild anemia, leukocytosis, and a progressive ise in his blood urea nitrogen. The sputum culture contained Fried ander's bacille the roentgenogram of the chest was initially negative except for blunting of the right costophrenic angle. Two days later mother chest film revealed mottling in the right upper lobe and hazi iess in the left lung base. An electrocardiogram showed PR interval prolongation and ST segment elevation of the leads on the left side of the precordium. The patient's course was downhill and he died on he eighth hospital day five days after treatment with streptomycin was instituted Could we see his x ray films now?

Doctor Hotch The initial chest film shows clear lung fields and a normal cardiac contour There is some apparent pleural thickening in the right costophrenic angle. The film taken two days later however shows a mottled density in the right upper lobe.

Doctor Shofr Is there any fluid?

D to H tch I don t believe so

Doeto Shof on It appeared that this patient died with a Friedlander s pneumonia however this was probably just the terminal complication of a more chronic illness Herein lies the problem as to the differential diagnosis of this bizaire syndrome Apparently this patient had a dis

Lt (1g) M on L Shafran (MC) USNR W rd Off c r M d c 1 Serv ce Capt. J h L Hatch (MC) USN Ch ef of Rad ology

ease one of whose prime manifestations was that of renal insufficienty. We have sufficient evidence to say that this man died in uremia with rising blood urea nitrogen fixed specific gravity clouded sensor rum friction rubs and anemia. It would be of interest to know what this patient surine output was during his hospitalization.

D et D l $\,$ y During the last two days his urine output ranged from 600 to 400 cc $\,$ per day

D et Sh f Of interest was the fact that he was relatively normotensive. His diastolic pressure was recorded as 76 mm. He He had no red blood cells nor casts in his wine That could produce his wemia? There was no evidence of any obstructive uropathy. We can assume that when this man was separated from the service seven years ago he had neither hypertension nor any urinary abnormalities. It would be of some importance to know whether there were any urinary abnormal ities suspected on his admission to a hospital nine months prior to his present admission. I will make the assumption that his urinalysis and blood urea nitrogen were normal then If this is the case it would be somewhat unusual for this man to have either chronic glomerulonephritis or pyelonephritis as the cause of his uremia because the duration of his illness would then be uncommonly short. He did not give a history referable to any disease of the urinary tract in the inter vening months. He died in tremia with nothing to suggest an acute nephritis It would also be somewhat unusual for him to be normotensive in the wemic stage of either chronic glomerulonephritis or pyelonephri tis Absence of red blood cells in his urine is also against this being an acme glomerulonephritis We have no reason to suspect an acme tubular necrosis or lower nephron nephrosis We are left then to consider some of the rarer causes of uremia

Could this man have had renal tuberculosis? Tuberculosis can ac count for the pneumonitis pleuritis pericarditis myocarditis nephritis and bone involvement simulating arthritis. However this would be a most unusu I course for tuberculosis to follow His lungs were clear when he first entered the hospital except for the blunting of the right costophrenic angle. The pneumonitis appeared only after the fatal syn drome had evolved. The pleural thickening may represent an old tuber culous pleuritis but is probably not related to this present illness Pleural effusions and pericarditis usually indicate a marked hypergic response to tuberculous infection. This occurs but is unusual in a man of this age Tuberculous pericarditis is often associated with tuberculous mediastinal nodes which were not seen here. Bone and renal tuberculosis are usually secondary to herratogenous dissemina tion of tubercle bacilli for which we have little evidence here in the absence of miliary lesions in the lungs and hepatosplenomegaly Renal tuberculosis often occurs many years after the hematogenous dissemination and not concomitantly with a tuberculous pneumonitis and bone disease. I don't believe he had tuberculosis

Because of the multiplicity of organ systems involved I am forced to look toward the diffuse collagen disorders for his diagnosis Poly arterius nodosa could account for his uremia arthritis pleuritis peri carditis low grade fever epistaxis and electrocardiographic changes However the normotension the absence of eosinophilia the absence of neurologic changes and the absence of asthma nodules and lymph adenitis are all somewhat against this diagnosis. Lupus erythematosus disseminatus should be given a good deal of consideration Pulmonary infiltrations are not uncommon manifestations of lupus In fact these patients have an unusual susceptibility to pneumonias Pneumonias were found in 15 of 22 patients reported by Israel 1 Of these 22 patients 20 had some pulmonary involvement either a pneumonitis or pleural effusion. The pneumonitis was either viral or bacterial in origin and generally speaking did not show the typical collagen disorder changes that are described with lupus erythematosus. There was no perivascular infiltration as such With lupus erythematosus we could explain the pericarditis the pleuritis, the arthritis and the nephritis

A diagnosis of pellagra was made nine months prior to his present admission. That was presumably made on the basis of a generalized dermatitis and a history of alcoholic excesses Traut² in his book on the umatic diseases mentions pellagra in the differential diagnosis of lupus erythematosus Doctor Cox do you believe that the skin lesions of these two diseases could be confused?

Doctor Cox I dont believe they could dermatologically

Dector Shefron It isn't uncommon for patients with lupus erythema tosus disseminatus to remain normotensive in the uremic stage of their disease. They commonly die of intercurrent infection. There are a number of features that are somewhat against this diagnosis however. The disease is predominantly one of young females. The often quoted ratio is that of 95 females to five males. I haven t seen a hundred patients with lupus—I have seen maybe a half dozen but of these three were males. I don't know whether I m just getting a distorted picture but it seems that the quoted ratio is somewhat exaggerated.

Neutropenia is characteristic of disseminating lupus. However, these patients can respond to infections with a leukocytosis. Three of Is rael's patients had a frank leukocytosis of over 15 000 per cu. mm and seven of the other 22 patients he reported had white blood cell counts from 8 000 to 11 000. There are a number of other features that are also against lupus. With his renal disease there is no report of hema turia. He had no heart murmurs and usually the serum globulins are elevated. Was a lupus erythematosus (L. E.) preparation made to try to demonstrate changes in his neutrophils after incubation with his own serum?

Comd J ba H Cox (MC) USA Ch ef of D smat logy

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D et DI y No lupus erythematosus preparations were not made

Detor 5h f n There are other diagnostic possibilities that I will reserve for last because they fail to explain the whole picture A pul monary infarct is not unlikely In this age group probably the most common cause of chest pain friction rub and hemoptysis is pulmonary infarction Somewhat against this diagnosis is the fact that a lesion found on roentgenography although suggestive of a pulmonary infarct failed to evolve Also he didn t have most of the predisposing factors for pulmonary infarction that you might expect

Rheumatic fever could cause the epistaxis joint swelling tachy cardia prolonged PR interval pericardial rub and skin lesions. How ever I find it rather difficult to make such a diagnosis in a man 57 years of age not could I readily explain the involvement of only one tour the normal size of his beart and his renal disease With a history of psoriasis and the presence of a swollen tender wrist one might also think of rheumatoid arthritis The possibility exists but I don t think it is a very important one in this case

The patient had a history of heavy alcoholic intake and an underlying debilitating disease. Both factors predispose him to a terminal Fried lander's pneumonia. There are several features of this type of pneumonia which this patient presented Such patients tend to run a low grade fever usually not higher than 101 F which is low when contrasted with pneumococcus pneumonia. There is usually marked pros tration and the sputum is tenacious mucoid and tends to stick to the sides of the cup The sputum may be copious but it also may be raised with such difficulty that it is scant Blood streaking of the sputum is quite common but is usually homogeneously mixed giving the sputum a brick red color Pleural effusions empyema and pericarditis can occur with Friedlander's pneumonia Radiologically the lesions occur more often in the upper lobes. Generally these lobes appear much denser on x-ray and are often described as appearing to be very heavy On x ray you occasionally see a sagging interlobar fissure looking as though it is being weighted down. There is a tendency for it to cavi ta e because necrosis is one of the dist neutshing features of Fried lander's pneumonia Bacteremia was probably present here Blood cultures of Friedlander's bacilli have been obtained in as main as 50 percent of the patients. It is possible that the original cause of the right pleuritic pain with shoulder radiation was due to a subphrenic abscess Doctor Hatch was that sight diaphraem significantly elevated?

Doet H tel- Not really and it is normally higher on the right than the left

Der Shif on With a five weeks history of right sided chest pain and few findings on his chest x ray at the time of admission one must consider a sub, henic abscess on the right possibly due to Freid lander's bacillus. The origin would be somewhere in the gastrointesti nal tract possibly an old perforation of the appendix or colon I be lieve that it is most likely that the Friedlander's pneumonia was not primary in the lung but was the result of a Friedlander's bacteremia According to Bachr and associates, primary infections of the lung with Friedlander's bacillus are rare. They are usually secondary to bacteremia Friedlander's bacillus is present in the feces in about five percent of normal persons and are also a part of the normal flora of the upper respiratory tract.

I now find myself in the difficult position of having to decide on the cause of this man's illness. The disease appeared to be wide spread involving many organ systems. I think this man had a diffuse collagen disease. There are features of both polyatteritis nodosa and lupus erythematosus. I prefer to think he had fupus erythematosus disseminatus which was terminally complicated by a Friedlander's bac teremia and pneumonia.

Dr Shafran's diagnoses

- 1 Acute disseminated lupus erythematosus
- 2 Friedländer's pneumonia

Docto Hoynes.* When I first saw the patient I was impressed by the multiple joint involvement and thought he had a polyserositis

Doetor Hirsch Was a fundoscopic examination done? The low urinary specific gravity uremia and blood pressure of 160 suggest that he had contracted kidneys Nosebleeds are very commonly seen with this condition

Docto Delaney The funds were not visualized by one examiner

Docto Nichols Bright red conjunctival hemorrhages were seen Were there any petechiae or hemotrhagic manifestations elsewhere?

Doctor Delaney None are noted in his chart

Doctor Stelle Do you think there is any relationship between his alcohol intake and the fatal illness?

Doctor Shofron I know of no relationship of alcoholism to collagen disease. However his terminal Friedlander's pneumonia might have been related to his alcohol intake. There is a higher incidence of Friedlander's pneumonia in alcoholics though it is also seen with any severe debilitating disease.

Doct r Jom s Was a definite diagnosis made on this patient s erythematous eruption?

Cond L will Hises (MC) USA Chief of Surgery
D Os at Huich Consultant in Oblanyapology
Cail C A chol (MC) USA Chief homopsychiatry
Capt T llian J J a (MC) USA Ch f f N wormgery

D for Sh f I don't know I assumed that this was probably residual psoriasis

Det Vlk The thinking of the staff on the ward was influenced by the history of alcoholism that was obtained On a previous admission to another hospital pellagra was diagnosed. The hemor thagic areas on the sclera, the hemophysis and epistaxis were thought to be due to a vitamin deficiency possibly scurvy. He did not have a definite diagnosis for the skin crution.

D eter C According to the description given in the protocol the skin lesions were nonspecific and could be pellagra a bacterial derma titis et cetera

Doctor Hoy s I thought the skin changes were just a common stasis dermatitis around the ankles associated with small varicose veins

D to K k Was the urine repeatedly negative for sugar?

D t D l y Yes

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Det Sie One must also add subacute bacterial endocarditis and anyloidosis to the differential diagnosis of a patient with utemia and a normal blood pressure There were no indications that either of these diseases was present here. One almost never sees subacture bacterial endocarditis in the absence of cardiac mumiurs. Amyloidosis is usually accompanied by hepatosplenomegally and some elevation of setum glob ulin. I congratulate Doctor Shafran on his very thorough and very in teresting discussion.

Clinical diagnoses

- 1 Friedlander s pneumonia
- 2 Laennec s cirrhosis with multiple vitamin deficiency
- 3 Uremia cause undetermined

PATHOLOGIC DISCUSSION

D t D 1 y The pathologic findings confirm Doctor Shaftan's diagnoses. The major findings were in heart kidneys and lungs

The heart weighed 400 grams and was within normal limits but there it is at thick fibrinous pericarditis and 30 cc of clear pericardial ef fusion Gross vegetations were not seen on the heart valves but micro-scopically the mitral leaflets and the aortic cusps showed small ver ucous lesions. These excressences were present on both surfaces of the mitral leaflets and on the superior surface of one of the aortic cusps. They were elevated often covered by endothelium and consisted of swelling of the collagenous connective tissue with fibrinoid degeneration and some inflammatory-cell indiration. One of the lesions on the aortic cusp was ulcerated and covered by an irregular mass of

Comd Raiph V Ik (MC) USN A tan Ch f f Med C mdr M Ito Kur k (MC) USN Ch f f P d tr

D H b S Sise Co ulm Med

fibrinoid material Within the verrucous lesions on the mitral valve there were degenerative changes of the inflammatory cells and deeply staining ovoid bodies resembling the so called hematoxylin bodies seen frequently in lupus crythematosus disseminatus. The myocardium had small perivascular areas of fibrinoid degeneration and inflammatory cell infiltration but this was an extension of the reaction in the pericardium.



Figure 1 Photomicrograph of a glomerulus showing thrombos s of the capil lates of the lower tuft uith early mecros s Excessive cellulatry is appa ent (Hematoxylin and eosin stain, ×350)

The kidneys were greatly enlarged each weighing 310 grams and the cortices were swollen smooth dark red and covered with pete chae. The corticomedullary differentiation was indistinct and there were petechiae in the medulia Microscopically the various lesions commonly seen in acute disseminated lupus erythematosus were found (figs 1 and 2). Most prominent among these in this patient was a proliferative glomerulitis. There was proliferation of the capillary endothelium and of the capsular epithelium leading to complete obliteration of many of Bowman's capsules and of many glomerular capil laries. There were some of the typical wire loop, glomerular capil laries but this was not a prominent feature. Within many of the capil lary tutts there were fibrin thrombi which had resulted in necrosis of portions of the glomerular tufts. Though this resembled a somewhat similar and closely related disease disseminated platelet thrombosis.

I believe that this can be excluded by the presence of some of the other components in this man a illness. These thrombi within the glo merular capillaries did not appear to be embolic because of their distribution and their absence within other organs.



Figur 2 Th thia and not total been bag bwn noth photomorograph The glomeral nother cent for field how apila prolf t with recomple blevate of Bowman' cple (Himatxyln and east an ×350)

The lungs showed an organizing and hemorrhagic pneumonia con istent with Friedlander's pneumonia and uremia The lungs were heavy and covered by fibrin from the pleural effusions. The right lung weighed 1 300 grams and the left 1 050 grams. There were numerous hemorrhagic coisolidations within which were small cystic areas These are sometimes seen with Friedlander's pneumonia. There is no specific pulmonary picture for acute disseminated lupus erythem tosus although it has been pointed our by many that a hemorrh gic interstital pneumonius is often seen with it.

The spleen weighed 190 grams and w s covered with fibrin There were irregular firm yellow infarcts which varied from a few millimeters to a few centimeters to size Microscopically the infarcts appeared to be several weeks old Within some of the central arterioles there were organizing thrombi. These infarcts may have resulted from emboli from the beart valves. The feature which is often mentioned in

the description of acute lupus erythematosus disseminatus in the spleen the periarterial fibrosis was not prominent in this patient but was present to a moderate degree

The liver was congested but otherwise normal. There was nothing to suggest a focus of Friedlander's infection outside the lungs.

Pathologic diagnoses

- 1 Acute disseminated lupus erythematosus
- 2 Friedlander's pneumonia, resolving

Dr Meissner Not every case of lupus erythematosus shows such a good correlation between clinical and pathologic features as in this instance While some of the typical findings of disseminated lupus erythematosus are absent in this case there are many instances where in spite of the characteristic clinical course the pathologic changes are minimal or difficult to find. It is only by the histologic examination of numerous patients that one can see the entire range of possible pathologic manifestations in this disease.

The diagnosis of Friedlander's pneumonia in this case made clinically is of interest. The relative frequency of this type of pneumonia as compared to other specified types of pneumonia is increasing now that pneumococcus pneumonia has been brought under control by chemo therapy. In many laboratories Priedlander's pneumonia is found at autopsy to be more common than pneumococcus pneumonia. The diagnosis is made more often by the pathologist than by the clinician.

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Headache only rarely indicates a serious condition inside the skull but because of this possibility and the fact that the different varieties of headache often have not been clearly distinguished many physicians have avoided attempts to relieve this complaint if more is required than analgesic medication. This attitude is unfortunate because differentiation of the various types of headache is usually easy and symptomatic relief can often be obtained by simple methods readily applicable in the office.

D Will mAM s CasltatinPthlgy

CLINICAL AND LABORATORY NOTES

Treatment of Aphthous Stomatitis With Aureomycin Mouthwash

ALEXIS ASTAFF Cant n. DC 115A

APHTHA the so-called canker sore is a painful condition which may occur singly or scattered throughout the mouth healing usually requires from seven to 10 days. The lesions have been treated topically by application of such drugs as diluted Talbot's solution (todine and zinc todide glycerite) phenol tri chloroacetic acid camphor spirit, and the use of aureomycin mouth wash and ointment Patients with aphthae have also been treated systemically by administering vitamin B complex thiamine hydro chloride vitamin C radiation therapy vaccination with smallpox vaccine aureomycin and oxytetracycline (terramycin)

The cause of aphthous ulcers is still questionable. Some be lieve they are due to the herpes virus or that they are precursors of hernetic gingivostomatitis Other predisposing factors may be an allergy gastrointestinal disturbances hormonal unbalance and psychosomatic factors

Twelve patients who had one to six aphthae scattered on the mucous rembrane of the oral cavity were selected The ulcers were in various stages of the disease and only one patient had generalized gingivostomatitis Body temperature of each patient was normal Two ounces of aureomycin suspension containing 125 mg of aureomycin per teaspoonful was prescribed for each patient who was instructed to dilute this suspension equally with hot water and to rinse the mouth three times a day with it. The mouth was rinsed for 30 seconds around the area or areas of the aphthae then the patient expectorated the solution

Twenty four hours after commencing treatment patients had no noticeable pain The lesion was still present but was not painful to pressure After seven days most of the aphthae had disappeared and the mouthwash was discontinued. The patient with gingivosto matitis however developed cheilitis and a more pronounced gen eralized soreness of the tongue and mouth after 24-hour use of the aureomycin mouthwash and this was then immediately dis continued.

The patient who presented acute symptoms after using the aureomycin suspension was possibly allergic to the suspension As

F m U S. Army Da pen ry F Myer V

yet it has not been established whether the aureomycin is effec tive directly against the herpetic virus or acts on the secondary bacterial invaders' Clinically, it appears the latter effect was responsible for the prompt relief of pain. This simple procedure is advocated for rapid relief of pain in aphthae sufferers

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VOGUES IN PSYCHIATRIC TREATMENT

This enthusiasm for the new is an old pattern in medicine and es pecially through the years has it been applied to the ills of mankind for which least specific remedies have been available. In no branch of medicine have there been more varied and enthusiastically accepted but short lived and unproven therapies than for the common emotional symptoms of stress Fifty years ago trephining was in great vogue in the leading medical clinics as accepted treatment for all emotional disturbance We are but a few years away from the rather wholesale removal of teeth tonsils and prostate as well as long sections of the gastro-intestinal tract in a vain attempt to remove microscopic foci of infection and prevent auto-intoxication as a routine treatment of schizophrenia. The preliminary reports on those methods of treatment were as encouraging and optimistic as ones we are encountering today

⁻JOHN P BELL M. D

in Journal of the Kentucky State Med cal Associat on p 788 Oct 1954

Recovery of Salmonella From Contaminated Cultures

JAMES INO M S CHARLES D GRABER Maj MSC, USA

I SOLATION of salmonella from cultures contaminated with pseudomonas organisms is difficult if not impossible using the usual plating technics. Inhibitory agents such as 0.1 per cent sodium azide and 0.2 percent chloral hydrate commonly used for reducing the number of proteus bacteria in clostridial cultures are inoffectual because they also hinder salmonella growth Likewise the use of an antibiotic such as polymyxin fails because it is equally bactericidal for pseudomonas and salmonella?

Although members of the family pseudomonadaceae are often moule salmonella are much more so and this fact has been used on several occasions to recover the latter from a mixed culture A modification of the method of Craigie* for phase isolation in salmonella was used for this purpose by inoculating the mixed culture in one end of the tube (fig. 1) and allowing the two or ganisms to migrate through the semisolid media. A tellitale wake of hydrogen sulfide was observed tracing the growth of salmonella as it outdistanced the pseudomonas. By this method isolation and identification of salmonella in from three to four days was possible

Five salmonella stock cultures S newport S typhimurum S paratyphi B S typhosa and S newington were combined with three Pseudomonas aeruginosa strains isolated from body fluids of patients in this hospital A total of 15 combinations effected in this manner were inoculated to higher iron agar and then subsequently subcultured to a U tube containing somisolid medium (Simmons Difco) In 24 hours it was possible to isolato a pure culture of the salmonella species from each of the 15 cultures at the opposite end of the U tube by streaking a salmonella shigella plate

The use of U tube affords a fast simple and effective method for separating salmonella from pseudomonas based on the fact that salmonella are almost always more actively mobile than the pseudomonas organisms

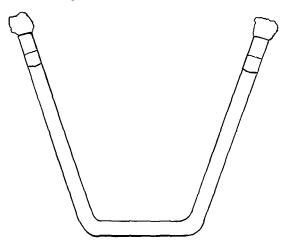


Figure 1 The tube made of one-quarter inch glass twhing seven inches long is filled with semisolid medium through which the desired organism m grates. Ster le cotton in the ends prevents contamination.

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ADMIRAL HOGAN SUCCEEDS ADMIRAL PUGH. BECOMES 22d SURGEON GENERAL OF NAVY

Rear Admiral Bartholomew W Hogan became the twenty second Surgeon General of the Navy on 15 February 1955 ucceeding Rear Admiral Lamont Pugh who has held this high position for the past four years Admiral Hog n is also the twenty sixth Chief of the Navy s B reau of M dicine and Surgery



er m ny R ar Adm l Bath lom w W H gan right, um a S g on G al by R a Adm l l a H N I dg Advocate Gen al of th Natry th p e of U d S c etary of th N vy Thomas S G te

Admiral Hogan was born in West Quincy Mass in 1901 In 1925 he received the degree of doctor of medicine from Tufts College Medical School and ws aw rded the Phi Lambda kapp Medal for highest ach v ment Upon graduation he was appointed a lieutenant junior grade in the Medical Corps of the Navy and rose through the ranks to rear admiral For heroic service during World War II he was awarded the Silver Star Med 1 and later the Navy and M rine Corps Medal and the Purple Heart M dal

He has served in succession as comminding officer of the Naval Medical School and of the Naval Hospital National Naval Medical Center A Fellow of the Amer c n College of Physicians and the Amer ican Psychiatric Association he was appointed Deputy Surgeon General and Assistant Chief of the Bureau of Medici e and Surgery in 1954

OFFICIAL DECORATIONS

LEGION OF MERIT

D Imar E Domke Col MC USA Raymond E Duke Col MC, USA Paul S Fancher Col MC USA James H Forsee Col MC USA Katherine V Jolliffe Lt. Col. ANC USA Allen F Kingman Jr Maj MC USA

Georg T O Reilly Lt Col MSC USA Ralph V Plew Col MC USA George Pr zak Col MC USA James B Stapleto Col MC LSA Rob et L Whitfield Jr Lt Col MC USA Pt Za Col NC USA

BRONZE STAR MEDAL

Dominic L. Affatato Capt. MSC USA Edga W Bell Capt MSC USA Donald L Br ok 1st Lt. MSC, USA Jerom M Cohe 1st Lt. MSC USA C urs B Conklin J Lt Col MC USA Ralph H Nedeau, CHO MSC USA Charle F C us Col MSC USA Jo eph K Ei en tein Lt Col DC USA Carl N Ekman Lt Col MC USA Edwn Q Fink Lt Col DC USA Edwa d W Freita 1st Lt MSC USA Chal J Gorell Lt Col MC USA B aneau E H II Capt. ANC USA

WII m C Hollifi ld Lt Col MC, USA Flor nc E Judd 11ay ANG, USA Franklin S List r Lt. Col DC USA Mill rd C. Monnen Lt Col MSC USA Percy O Parker Lt Col DC USA Russell O P anepacker Lt Col MSC USA William D Reib Lt Col MSC USA Ralph C S ng May MC USA Rob rt D V sburgh Capt NG USA Flyd J W II May MSC USA

COMMENDATION RIBBON

Ve non B Astler Capt MC USA Jose A. Barr Lt Col DC USA Rolla L B ch p: Col MC USA Henry M Be ards Ist Lt MSC USA I z H Blo sman Capt. ANC USA John M B ast n 2d Lt MSC, USA K n th L Bt y Ist Lt 41SC, USA Edna M B wn g Capt ANC USA Geo g W Byers 1st Lt MSC USA Do ld K Campb 11 1st Lt. MC USA Jerom M Cohen 1st Lt MSC USA Jam s R Coy Copt USAF (MC) E gen P C onk te Comdr (MC) USA Myrd M Denfp Capt. ANC USA E entt P D I a Ist Lt MC USA B 1 m n w Dun Lt. Col USAF (DC)
Cha les M Elwood, 1st Lt. MSC USA Michael A Guli Man DC USA Lea B Gi I t Lt. MC USA

J hn L H rr gton Jr Capt MC, USA LaR y D H k Maj MSC USA Bl che M Lewkr w c Capt. ANC USA H man I L tile May USAF (MSC) Thornton E Luttr Il Capt MSC USA C th tin E N ville Capt ANC USA D ald J Norto 2d Lt NSC, USA Raym nd E P t Capt MC USA GI BH R hmond Capt 4C USA G g F Rum r Lt Col MC USA Charl G Sar cc 1st Lt DC, USA Helaj Sh de May ANC USA M Ic Im S Schry Ist Lt MSC USA Edward N Schwart Lt Col USAF (NC) Lo I Sigal w Capt DC USA Samuel J T la o 2d Lt 41SC USA Rob t C. T mpler Capt. MSC USA P ter P U grarsk Capt MSC USA

Oak L af Cluster Awad doo thum usly

The names foff ersofth medical re who have be naw red decorations by th Unit d State Army Na y or Air Fo ce a publish di th dp tment each mo h f llow ng r pt f info mat n fr m off cial sourc s -Edutor

PROMOTIONS OF OFFICERS

The following officers of the military medical services on active duty in the Army Navy and Air Force have recently received permanent promotions to the rank indicated

Medical Corps

S AB h M , USA S of d L B H t Capt USAF W ne F B w C I USA V c P Capp lluz Capt USAF R b rt T Ga C! USA

Hald E Hais CL USA H b a W M II LI C I USAF G & F P C ! USA Chal O Rix y M , USA HIES dd Capt USAF

Dental Corps

W lliam C Adams Capt USAF E t M Bastd Capt USAF Phip Bral Capt USAF G g F C to C pt USAF R y E D 1 Capt USA

R bert N Ha ag on Maj USA W odad M H ag J Maj USAF B II D M G w Capt USA W C My Maj USAF Jh W Pl mme Capt USA

Veterinary Corps

WII mR Bld bak Capt USAF
FdikW Clayt Capt USAF
Jh LR Cpt USA
Edw dE D Cpt USA
RyW Upham Cpt USA Edw d E D C pt USA Rus 11 F G Capt USAF

D Id H Y Capt USA

Medical Service Corps

J ha N All as Capt USAF W II m S B ck Capt USAF Emry B B h Jt I t Lt USAF Al ad J Cad II 1 t Lt USAF Ow FC lly Capt USAF Rym d J C k C pt USAF W lliam T D dg M j USAF N ma S Dow M j USA Ge g J Foeg 1 t Lt USA RbnLG Maj USAF Wit F Gane Cpt USAF L W Hall I t Lt USAF H w d C H asl y J Maj USAF
D lM H J C pt USAF
Franc L H l ha Capt USAF
Rus ll E H M j USAF Lui G How II Maj USAF Jh A Jhas Capt USAF Alf dD Kne y I tLt USA

H ma I L 1 Cpt USAF Im E Ma h I t Lt USAF K meth L Ma If Capt USAF R b A M g b 1 t Lt USAF Ma H Mix J 1 t Lt USAF Ly B M 1 t Lt USA RyCP ce It LL USAF
RyCP ce It LL USA
R ben J R i C pt USAF
D mald J R ii g Capt USAF Ha Id G S h It C bt USAF Sua S Sm th Maj USAF K h E Smyth Capt USAF William E Will Capt USAF Chai J W d mas C pt USAF Ob R Wht Capt USAF D mid R W k lbl h Capt USAF Hary M ▼ If C pt USA Blly B Z II Capt USAF

Nurse Corps

MathaD 1:L: USA B Y D M 1 USAF Md Iya N P ks 1 t Lt. USA

D MRb n, I t Lt USA L 1 C Sla ry M 1 USAF M ld d E Sm h Maj USAF

The following officers have been promoted to the temporary rank indicated

Medical Corps

Domald J Albrecht Capt USAF J mes F Alı on Jr Capt USAF Julius M Amberson Capt USN Da id M Bikoff Capt USAF Ale nder F Bonacatti It Capt USAF Anthony R Bucalo Capt USAF William W Cl veland Capt USAF Jerome R Cornfield Capt USAF William J Craig Capt USAF George S Croffead Capt USAF Roy E Crowder Capt USN Angel Diaz Montanez Capt USAF Wesley Fry Capt USN Hatold D Gidd ngs Capt USN Walter W Gilbe t Capt USN Abner M Glov r Jr Capt USAF Phil p M G ring Capt USAF Jck K G od ich Capt USAF MI a Gren Ist Lt USAF William E G en Jr Capt USAF Frank W Guthr e Jr Capt USAF G Iben W Hague Capt USAF John S Hanten Capt USN Robert E Hend son Capt USN Harold H Hill Capt USN Charl K Holloway Jr Comd USN

Robert L Knox Capt USAF William H Long III Capt USAF George M Lynch Capt US'V John B Lynch, Capt USAF David C Mar hall Capt USAF Presley F Martin Capt USAF John F McCabe Comdr USV Robert L Michael Capt USAF James N Moore Capt USAF John A Morton Capt USAF Bernard N Nathanson, Capt USAF Samuel G Perlson Capt USAF Joe A Pr ley Capt USAF Haskell I Rab nowitz Capt USAF William C Rike Jr Capt USAF Sterling J R tchey Col USA John W R II Capt USAF H told C Scha fer Capt USAF Seym ur Schifman Capt USAF James B Seaman Col USA William Smith Jr Capt USAF K an th S mers Col USA H N Spence Capt USAF Jhn H St ve J Cometr USV Benjamin H Sullivan Jr Col USA Cecil C Ward Capt. USAF Herman D W bster Jr Capt USAF

Dental Corps

Orton R B ns a Capt USAF
Raymond L Bla chert Cornal USN
Paul Bost an, Cornar USN
W lluss J Chatm, Capt USN
John M Ch kuma Capt USAF
Robert A Colby Capt. USN
Go at J Coll ags Capt USAF
Calvin L Fos Cornal USN
Gle ac Gould Capt USAF
J hap Ga mats n, Capt USAF
Raymond F Johnson J: Capt USAF
Raymond F Johnson J: Capt USAF
W lluss L K st 1 cky Cornal USN
W lluss L K st 1 cky Cornal USN

Arthur I Hunter Capt USAF

John B L dioss Capt USAF
George C Lutly Capt USAF
Edw rd L Maggard Capt USAF
Stuart McN M rch II Col USA
Robert J Mull r Capt USAF
L J Mun y Capt USAF
L J Mun y Capt USAF
Leon Peralan Capt USAF
Winlaw A P: be Col USA
Maic In S Sharpe Capt USAF
P rand Stahl Capt USAF
Charl s R Stat es Capt USAF
J mes S T t III Capt USAF
Gerald S Wank Capt USAF

Veterinary Corps

Steph G Asbill Col. USA
J seph D Mags Col USA

Alex Munson Maj USAF J hn H Rust Col USA

Medical Service Corps

G tr R B is Capt USAF H nry B y J Capt USAF Fort tE Bl yd Capt USAF Jell J Burnett Capt USAF

H rma H Burton, Corner USN
Chal F Ch m Capt USAF
Hatry W Combs J Corner USN
Howard M D at n, Cart USAF

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DR I S RAVDIN, DISTINGUISHED SURGEON NAMED MAJOR GENERAL IN RESERVE CORPS

Dr I S Raydin John Rhea Barton Professor of Surgery at the Uni versity of Pennsylvania and a member of the Civilian Health and Med ical Advisory Council to the Assistant Secretary of Defense (Health and Medical) on 15 February 1955 became the first reserve Medical Corps officer of the Army to achieve the rank of major general while on inactive status



L fi to ghi D Fak B B rry Major Gee I Gog E Amstong USA M jor Geral I S R d USAR and Major G ne al Howa d McC Snyd USA (R t)

The promotion ceremonies for Dr Raydin in the office of Major Gen eral George E Armstrong Surgeon General of the Army were attended by his wife Dr Elizabeth Raydin and daughter Mrs Donald Bergus and Mr Bergus Dr Frank B Berry Assistant Secretary of Defense (Health and Medical) and Major General Howard McC Snyder USA (Ret) Physician to the President in addition to high ranking Army medical officers were present to congratulate Dr Ravdin

Two other Army reserve Medical Corps officers elevated to brigadier general in the Medical Corps at the same time Dr Raydin was promoted were Dr James B Mason Chicago director of professional education and accreditation of the American College of Surgeons and Dr Manfred 11 Prescott of San Francisco

A MESSAGE FROM THE A M A

The Army Service Graduate School at the Walter Reed Medical Center in Washington D C has been conducting a course on Medical Care of Atomic Casualties for military medical officers and civilian physicians interested in the medical aspects of civil defense preparedness A brief report on some of the items covored in this course is both timely and of interest to medical officers

Upon release from active duty, medical officers can make important contributions to civil defense at the state and local levels. Some of the experience and training received by them in the military service is equally applicable to civil defense activities. In time of national emergency and in the event of an enemy attack upon the civilian population, the biggest responsibility will fall to physicians.

Although the medical profession is acutely aware of its role and has demonstrated great interest in the medical aspects of civil defense, there is still much to be done. It is certain that a severe shortage of physicians to render medical services for mass casualties in the event of atomic attack will exist. Therefore, it is essential that medical officers upon release from active duty, participate in civic affairs directed toward civil defense preparedness.

"Medical Care of Atomic Casualties" is a 10 day course. The most recent session was held from 7 to 16 March Classes have averaged about 100 in attendance. The next course is scheduled to begin on 11 July 1955. The course usually opens with a binefing on the development of the atomic and hydrogen bombs. An outline is then given on the various tests made on the atomic bomb, the physical results, as well as the casualties caused by an explosion. A discussion of the Hiroshima and Nagasaki bombings is included in this part of the course.

Following this is a detailed discussion of the total casualties which may be anticipated from these types of explosions. This subject includes reports of the different medical specialties as they relate to treatment. Next, the importance of sorting casualties in triage is explained and emphasis is given to preparation of the civilian population as well as the individual soldier on "self help" and buddy or mutual aid.

Fr m The Council on National Defense of the American Medical As ociatio. The was and opin on a speed of are not necessarily those if the Depittm nit of Defense—Editor.

The course points out that in the event of an enemy attack using modern day weapons three primary types of casualties will have to be dealt with Casualties would occur from (1) blast. consisting of primary and secondary wounds (2) thermal including first second and third degree burns and (3) ionizing radi ation the later effects on those who reach a dressing station Talks are al o given and discussions held on special treatment of burns shock fractures debridement blood and blood substitutes and expanders. One lecture is devoted to civil defense and an afternoon is spent at the Civil Defense School at Olney Md Biologic and chemical warfare are likewise reported on and discussed

These courses have made it apparent that an atomic bomb will cause much destruction of property and life as well as produce mass casualties Multiple atomic bomb attacks or use of the hydrogen bomb will multiply these results to much larger pro-portions. The courses have also demonstrated that preparation from the medical standpoint must be to an extent hitherto un known In spite of this gigantic task the course does show how the medical profession can effectively handle such an attack if it has proper preparedness The demands will be so great that use of paramedical personnel must be planned These would in clude dentists veterinarians nurses technicians former medi cal corpsmen et cetera.

Plans are being made by the Army to conduct this course every two months this year for the purpose of educating military medi cal officers and civilian physicians in the care of mass casual ties following an atomic or hydrogen bomb attack The Surgeon General of the Army assisted in providing a team of physicians which is visiting medical societies and medical schools to prosent some of the high points of the course

The unwarranted use of parenteral medication favors haphazard diagnosis and follow up care it leads to prolonged and unnecessary therapy unless kept r gorously supervised. There is considerable evidence that many sattogenic siliesses are induced by the unnecessary use of shots It would be well if each of us resolved to scrutinize closely and analyze carefully our indications for parenteral medications

⁻JESSE D RISING M D Moun Malen p 1019 De 1954

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R dmond, A. J. Capt. USAF (MC) Infe n m ! ted w th ACTH.

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Rodr qu z, S W; MC, USA, T land W J Capt. MC LSA and Schwarz, J W C L MC, USA. ph omy-10-y as by MS Surgeon 115, 426-431 Dec. 1954

Slocam, H. C. Col. VC, USA. Problem f vertr m f g l p ts w b depr an drugs J A 4 A 156: 1573-1575, De 25 1954.

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Reviews of Recent Books

RECENT DEVELOPMENTS IN PSYCHOSOMATIC MEDICINE, edited by Eric D Witthouer M D and R. A Clegborn M D D Sc 495 pages I B Lippingott Co Philadelphia Pa 1954 Price \$10

This volume is actually a summation of recent developments in psychosomatic medicine and fulfills its purpose. It is also an effort to organize and codify current knowledge. The 29 contributors are out standing in the field, and much of the writing is excellent. One of the two sections of the book is devoted mostly to specific disease entities and the other section is more significant as a synthesizing effort to join common denominators in a total picture of psychosomatic medicine. Of considerable interest and importance perspectively is the chapter on historical developments. Fach chapter is followed by a well selected bibliography.

This book is recommended reading as a text as a yearbook and especially as a cross sectional evaluation and definition of the subject. This is not to say that it makes easy reading or can be easily digested by the novice. On the contrary, so much thought and effort are captured in this volume and so many issues are raised that reading and re-reading are indicated —DOVALD B PETERSON Gol. MC, USA.

THE DIGITAL CIRCULATION by Milton Mendlow tz M, D 182 pages illus trated Grune & Stratton Inc New York N Y 1954 Price \$6.75

This monograph brings together much information on the anatomy physiology and pathology of the digital circulation which would other wise require the student to search through many references (636 are listed) to review the available investigative methods of skin temperature measurement plethy smography and graphic oscillometry

Chapters on anators, physiology pharmacology pathology and methods are well written in others there are clinical considerations of peripheral vascular disease clubbing hypertension sympathectomy occonary occlusion amenia and polycythemia. These chapters serve as illustrations of the abnormalities of digital circulation present rather than as diagnostic or therapeutic instructions on peripheral vascular disease. Of particular value are the author's extensive personal contributions to the study of the digital circulation.

This work is attractively illustrated and well indexed. It can be recommended as a valuable reference for all students of the subject with either a research or clinical interest. This group is not a large one however. For the internist and student availability of this work in the library should suffice —B)ROVE POLLOCK, Col. MC, USA

CONTROL OF RATS AND MICE Volm I d II, R t dit d by D nn Cb tty V lum III Hou M d t d by H N South nn. V lum s I a d II 532 pg v lum III, 225 pg s ill t t d. Oxford U t ty P New Y k N Y 1954 Pr \$16 80 per t of 3 lume

These volumes report on rodent control research conducted by the Bureau of Animal Population Department of Zoological Field Studies Oxford University during the period from September 1939 to July 1947 During that time the Bureau acted as a research and scientific advisory service on rodent control to the Agricultural Research Council and through it to other government departments

A wealth of information is presented on the properties of poisons used in rodent control bait stations habits and ecology of rodents their response to baits and rat and mouse control in specific environments. A detailed index and numerous references add to the useful ness of the volumes. Their value is restricted by the fact that the work reported was largely wattime research in England, which necessitated placing emphasis on those poisons and bait materials available at that time. It is particularly unfortunate that a book appear ng in 1934 devotes so little attention to the antico gulant rodenticides. The only mention of this subject is a two-pase discussion of warfair.

The editor states in the preface that anyone who wishes to get rid of trats is strongly advised to obtain the government bulletins referred to in chapter 1 This will be cheaper and better than trying to use the present volumes as a manual on rat control. With this opinion 1 agree. These volumes should be of great value to those engaged in research on rodents and their control but they do not satisfy the need for a reference volume on the control of rodents for the use of those who plan and supervises such activities—RALPHY WBLN LL GAL MAG, USA

THE YEAR BOOK OF MEDICINE dited by Pul B B on, M D C I
M benb m M. D Willam B. Castl M. D T I y R H n n,
M D F z J i g i J g er M D d Pb i p K B ndy M. D 71
p g Il tr t d Th Year Book P bli he I c Ch g Ill 1954
P t s.

The abstracted articles in this new edition are from reports in U S and foreign journals during the period from May 1953 to May 1954. The articles on infections the chest blood and blood forming organs heart blood vessels kidneys digestive system and metabolism se lected for abstraction adequately cover the literature of the period and reflect the wide range of knowledge and interest of the editors. Their concises and critical comments following many of the articles are help ful.

The publication data following each article provides the reader with a ready reference to the original material. The index is excellent. This edition compares favorably with its valued predecessors and the excel lent format is unchanged. This volume remains a must for every practicing physician.—MERRILL C DAVENDERT Col. MC USA

THE VOICE OF NEUROSIS by Paul J Moses M D 131 pages illustrated Grune & Stratton Inc New York N Y 1954 Price \$4

This is probably the most complete treatise published concerning the evaluation of neurotic traits of personality through an analysis of speech. The author's philosophy is based on the premise that there is a definite correlation between neurotic tendencies and the character of the voice.

The development of vocal character is discussed in the first portion of the book and the influence of environmental experiences on the personality as expressed through the voice is traced from infancy to adulthood A major portion is devaced to a discussion of a rather de tailed list of accustic dimensions of voice with respect to how these dimensions are affected by various types of neuroses. Conversely the influence of the most commonly encountered neuroses on voice is explained Exemplary relationships between the various dimensions of voice are given as an aid to analysis of neurotic personality.

The book is well written and is relatively free of difficult unfamiliar technical terms. The author has done well in breaking down the various aspects of voice and of stressing the development of voice character istics in relation to the type of neurotic symptoms. He might have indicated however that an evaluation of personality through vocal analysis should be verified by other recognized means. In addition advice might have been given on proper referrals and follow up. Recognition is not given to the importance of the team otolaryngologists psychiatrists and speech pathologists need each other's services in treating voice disorders.

Although the book is probably intended primarily for psychologists the otolaryngologist psychiatrist and speech pythologist should find it most helpful because most of the discussion and all the case histories involve functional voice disorders—JAMES P ALDRITE Maj. MC USA

PHYSICAL THERAPY AFTER AMPUTATION by Margaret Bryce 92 pages illustrated University of Wisconsin Press Madison Wis 1954 Price \$150

This manual presents the standard procedures for the rehabilitation of patients following amputations below, through or above the knee These are discussed chronologically starting with the technics and procedures for positioning of the amputated leg immediately following operation and continuing through the phases of bandaging exercises and prosthetic training. The steps are graphically illustrated in an appended chart. Sequence of Fvents, which indicates in weeks the progression of treatment procedures for uncomplicated amputation.

The description of the treatment procedures is clear and concise and designed to provide easy reference Further description of the methods of bandaging the amputation stump below the knee would have improved the charter on bandaging. Much practical information on the cause of various limps and suggested corrective procedures is included. The

602

chapter on prostheses presents information on the elementary principles and types of prostheses which is essential to an intelligent application of exercise and gait training procedures as well as to effective cooperation with the prosthesis maker in the achievement of good results. A separate chapter is devoted to the suction socket.

The bibliography is excellent and is an asset to the physical thera pists professional library. The author of this book is to be congratulated on having compiled a well organized valuable and practical manual for physical therapists concerned with the cate of lower extrem ity amputees—HARRIET'S LEE IL C! WASCIPTO USA

This textbook of diagnostic and therapeutic radiology was written expressly for the undergraduate student of medicine. It covers the funda mentals of the subject in a concise readable and interesting manner. The revised edition has faithfully followed the intent of the original volume but the material has been brought up to date. The principal additions include discussi in sof congenital heart lesions and their demonstration with ang ocardiography pulmonary cour lesions new methods for cholecystography. Hirschsprung's disease presacral pneumography and translumbar actorg aphy. The therapy section now includes material on the poduction and use of r dioactive isotopes. The author includes his five year cure rates in treating patients with the most common malignant lesions.

The diagnostic section is illustrated with well chosen and excellent reproductions. The therapeutic section presents the most common maliginancies of the major body regions and describes treatment in general têtms. Nonmalignant conditions are also briefly discussed. The ultimate target as expressed by the author is an understanding of the foundations upon which modern therapy is built.

The bibliographies are well chosen and provide a list of the most significant contributions from the literature although in keeping with the purpose of the book they are limited in number The index covers the subject matter adequately. This is a useful book for residents in radiology and a compact reference for the clinician interested in this field—PAULO WELLS CL MC USA.

EXISTENCE AND THERAPY by Ul h S nnema n, Ph D 372 p g Gr e g St tt N w Y k N Y 1954 Pt \$5

This book is difficult to read and even more difficult to understand The language is often abst act and abstruse most of the concepts and ideas are essentially dialectic metaphysical and ontological

The contents are divided into three parts The Crisis of knowledge and the Rise of Phenomenology The Spectre of Nothingness and the

Janus Face of Reflection and The Peril to Man and Psychotherapy The Freedom to Be Despite the use of the term therapy in the title the author is primarily concerned with existential analysis (somewhat related to Sartre's writings) and the reader will search in vain for any appreciable discussion of therapy Of significance is the fact that the term therapy is not listed in the five page index!

The author is oriented toward a Gestalt type position although the exact nature of his thesis is not communicated clearly in the text Virtually all bibliographic references are to philosophers Gestalt psychologists and psychoanalytic writers Frtensive use is made of words set off in italics presumably for emphasis however this merely seems to emphasize the confusion inherent throughout the volume

There is no mention of the type of reader the author hopes to reach This reviewer can find little to recommend about this book to anyone except a staunch pre Reichenbach student in philosophy

-SEYMOUR FISHER Pb D

THE NEW WARFARE by Brigadier C N Ba clay C B E D S O 65 pages
Philosophical Library Inc. New York N Y 1954 Price \$2.75

We are living in a period of limited war rather than in a time of uneasy peace according to Brigadier Barclay. A new type of warfare has evolved which uses weapons against the mind and emotions of a people as distinct from those which tender bodily and economic harm. It is motivated by the fear that another all out shooting war would be cat astrophic to the two major ideologic forces pitted against each other today. The various weapons of the new type warfare include a deliberate and carefully wrought campaign of threat propaganda and subversive activity as well as limited shooting sometimes by proxy. Until there is resolution of the conflict between Russian communism and free democracy this warfare must be continued upon a realistic basis. This includes acceptance of the fact that the present world disturbance will take a long time to remedy and that the problem must be solved by a proper blend of moral and material values without too much emphasis upon either.

While this volume attempts to formulate basic principles and technics for carrying out the new warfate it does not expand them. It is indeed little more than a precis. Although it can provide ready reading for the casual student of military history it cannot sustain the depth of interest aroused by a Clausewitz or a Mahan—MAE M. LINK, Ph. D.

CLINICAL APPROACH TO JAUNDICE by Leon Schiff M. D. Ph. D. American Lecture Series. Publication Number 202, A Monograph in American Lectures in Abdominal Visceta Edited by Lester E. Dragstedt M. D. 113 p. ges. illustrated Charles C. Thomas. Publisher. Springfield. Ill. 1954. Price \$3.75

The opening sentence of the author's preface states that accurate diagnosis of the cause of jaundice is essential to proper therapy. This

statement cannot be disputed and the monograph does much toward presenting and clarifying the means for making such accurate diagnosis. The subject matter is divided into chapters on clinical examination laboratory tests toentgen examination needle biopsy of the liver and limitations and pitfalls.

In the first chapter the reader is told that a well taken history and properly observed physical examination should lead one to a correct diagnosis in 60 to 80 percent of cases. Another chapter discusses liver function tests and provides a brief but adequate description and inter pretation of each of those related to this organ and to obstructive disease. Under supplementary tests is discussed the very useful but comparatively infrequently used duodenal drainage. The section on roentgen examination presents 20 reproductions of roentgengrams and only serves to show that little help in the differential diagnosis of jaun dice may be expected from this source. The technics for performing needle biopsy of the liver are described and 22 photomicrographs of liver biopsy specimens are reproduced. They represent the various lessons one may expect to find in the diseased and invaded liver.

In spite of the author's apology the bibliography is extensive enough the index is complete and all illustrations are clear. The reader may refer to this book and obtain desired information almost at a glance. This monograph epresents the present day trend toward small unit references rather than cumbersome all inclusive expensive volumes.

— RALPH VOLK C mid: ROJ USN

DIAGNOSIS AND TREATMENT OF THE ACUTE PHASE OF POLIOMYELITIS
AND ITS COMPLICATIONS drd by Alb t G Bou ML D 250
P, B 64 fgur The WII m & WIKU CO B Itum Md 1950

Under the guidance of the editor 14 associates with a vast experience in the manag ment of acute poliomyelitis have collaborated in writing a modern classic. The most prominent feature is the recurring emphasis on the early recognition and rational management of respir actory failure no patient dies of acute poliomyelitis except as the result of respiratory insufficiency he can't breathe so he dies. The hand of the editor is evident throughout in reaffirming this principle as the paramount consideration in the management of the acute stage

Authorities may differ with some of the fine points expressed but this is a practical book founded on clinical experience and designed for practicing physicians who may need guidance in immediate matters of management as such it is admirably conceived and concisely and lucidly presented Particularly noteworthy are the chapters. Detection and Care of Respiratory Difficulty Biochemistry Electrolyte Changes and Experience of Washoe County Medical Team

The illustrations are excellent. Those relating to mechanical devices described and advocated in the text—tracheotomy tubes inebulizer unit ventilation meter and respirators and accessories—are of real value.

in their contribution to the effectiveness of the book. The bibliography is not extensive but it need not be in a book concerned mainly with the personal clinical experiences of the authors. The effectiveness of the recommended procedures in the management of respiratory failure is disclosed in the combined mortality rate over a two year period of only 20 percent for respirator patients as contrasted with the usual mortality of 50 percent or higher among such patients.

This book should be in the hands of every physician who is likely to see patients with acute poliomyelitis

-ROBERT L. MOYON LI Cords (NC) USN

THE GRAPHOMOTOR PROJECTION TECHNIQUE by Samuel B. Kutash
Ph D and Raymond H Gebl, M. D American Lecture Series Publi
cation Number 218 A Monograph in The Bannerstone Division of Ameri
can Lectures in Psychology Edited by Molly Harrouer Ph D 133
pages illustrated Charles C Thomas Publisher Springfield III 1954.
Price \$3 75

This manual presents the facts and principles underlying the administration scoring and interpretation of a new psychodiagnostic method called the graphomotor projection technic Consisting of five brief chapters the authors discuss the historical background and theory administration and seeing methods clinical wility with specific case illustrations and a comparative study of schizophrenics and normals Appended record blanks a bibliography and an index complete the volume

The graphomotor projection technic requires a blindfolded subject to devote two five minute periods to the free unstructured movement of a pencil on a nine by nine-inch square of paper. After each period the subject spends a short time identifying any objects pictures and figures suggested to him by the tracings. The production is then scored in numerous ways e g in terms of latency density speed of movement line with line breaks number of times off the page number of pauses content identification and general configuration. The rationale of all this is that the productions are presumed to reflect the subject s inner promptings "available energy co-ordination tension and "degree of conscious control."

A comparative study of schizophrenics and normals provides evidence of the reliability of scoring and the validity with which distinctions can be made between the groups in terms of production reas urements. Unfortunately however the validity with which the technic can be used as a general psychodiagnostic tool is not underwritten by comparable experimental evidence. No doubt the authors plan to secure such evidence. Veanwhile they have asked the reader to rely upon their clinical judgment and experience. Under these circumstances the best that can be said is that their speculations about the diagnostic implications of various signs are hypotheses which require experimental verification.—KOBERT B. PAYNE Va. UNAF (VIGC)

CLINICAL MEASUREMENT OF UTERINE FORCES IN PREGNANCY AND LABOR by S R M R ynold Ph D D Sc Jer m S Harn M D. nd Inw H K M. D Ph D 328 pg ll str ted Ch 1 C ThmsPblh Somefield III 1954 Pi

The title of this book is somewhat misleading. The field of toko dynamometry is clinical in the sense that it is applied to patients but it is not clinical so far as its application to everyday clinical practice is concerned. The book is written mainly for those who are interested in research on uterine contractions especially those unfamiliar with the technic of planning and conducting tests and analyzing the results obtained on a series of cases

The authors hope that this work will hasten standardization of termi nology and procedure in a field of investigation where at present a great deal of confusion exists. Its value as a reference would have been greatly enhanced had the uthors based their conclusions on results obtained from the study of an adequate number of cases Notable omissions in the types of cases studied are those with premature separation of the placenta and those receiving general anesthesia

Experimental work concerning the effects of epinephrine and I norepinephrine on the uterus is described in detail. The authors speculate that the adrenal medulla may be the factor responsible for the meffec tual contractions of the apprehensive patient. They gite recent investigations by other workers which show that epinephrine blood levels are much higher in the frightened patient than they are in the reassured one

For those obstetricians who are not by now familiar with the technic of using dilute intravenous pitocin (alphabypophamine) solution for selected cases of mertia for the induction of labor and for postpartum atony the chapter on the effect of pitocin on the uterus is well worth reading. Also of value to the practicing obstetrician are those sections dealing with the effects of the psyche anesthetics and analgesics on tahor

The work is well printed on a good grade of paper with a large and clear type the binding is adequate and the text is amply illustrated. -LEWIS T DORGAN Capt (MC) USN

TEXTBOOK OF BACTERIOLOGY by \$ epb M D gb ny Ph D d A tbony \$ L mb 1 M S 3d d tion 598 pg 190 11 tr to a Th C V M by Co Sc Lou Mo 1934 P \$825.

This volume serves two major objectives by incorporating many of the features of a general bacteriology text along with those aspects usually emphasized only in treatises on microorganisms of medical importance to man The author philosophy holds that full realization of the role played by microorganisms in the development of present-day social and economic structures is desirable for attainment of a broad academic background It follows that the college undergraduate can more readily achieve this understanding by thorough comprehension

of the basic concepts of the science of microbiology than through accumulation of highly technical knowledge which may not have general application. In keeping with this philosophy the subject matter for the most part is presented rather briefly and concisely. While this approach permits broad coverage of topics, brevery affords the opportunity in some instances for mismic pretation by the reader of the exact meaning or full implication of key terms and vital concepts. Amplification of material in lecture, or assignment of collateral reading from carefully selected review articles, would enhance the value of this text particularly for those students whose chosen field of study lies within the biologic sciences.

Illustrations are generally of excellent quality although in some cases equipment no longer commonly encoun ered in indeen laborato ties is portrayed. A considerable part of the bibliography which follows each chapter is devoted to the older literature including many publications of lagely historical interest; however a sufficient number of recent texts are referenced so that effectiveness is retained. This volume accomplishes quite adequately the purpose for which the authors envisioned it—primarily as an introduction to microbiology for those undergraduates interested in a rapid survey of this field of science—FRANKLIN L DAVIS J. Copt. USAF (MSO)

ROENTGENOGRAPHIC TECHNIQUE by Darmor Artelle Rhinefart V. D.
4th edition thoroughly revised 454 pages 216 illustrations Lea &
Feb ger Philadelphia Pa 1954 Price \$8 50

The author improved an already excellent text in this fourth edition It is primarily intended for the training of technicians medical students and physicians who occasionally do roentgenographic work. In the words of the author emphasis is placed on a method of developing a roentgenographic technic by experimen all exposures and by charting the results of actual diagnostic procedures. "Discussion of the more technical procedures such as kymography body-section roentgenography cardiography and cerebral angiography has been omitted.

The text is well illustrated In nearly every case the technical de tails are accompanied by a photograph of the patient cortectly positioned and by a reproduction of a typical radiograph. These rake for easy reading and understanding Although the material is presented in a simple and concise form the more advanced reader can find references for additional information in the extensive and up to-date bibli ographies which follow 19 of the 21 chapters. The material is well indexed. The chapters on the roentgenographic examination of the teeth and of the gastrointestinal tract are particulally good. The printing and binding are attractive.

This book should be of interest to technicians and residerts in radiology physicians doing occasional ro-negenographic work and radiologists responsible for the training of medical students and technicians—POBERT V CALLETEP Van MC USA

PARKINSONISM AND ITS TREATMENT d ted by L w J Do b y M D
Ph D 152 page ill str t d J B L pp ott C Ph ladelphia Pa
1954 P \$3

This small monograph of nine chapters each written by a recognized authority in the field of netwology was prompted by the increasing interest in Parkinsonism by general practitioners Is will serve as a handy reference book for the better understanding of the problems of this symptom complex and its man element

First the basic problems of Parkinsonism in regard to etiology clas ification pathophysiology symptoms and treatment are outlined In Chapter II the structure of the extrapyramidal system its physiology and finally the pathophysiology of this system are discussed and some of the recent animal experimental work is described In Chap ter III the causes of postencephalitic idiopathic (paralysis agitans) and arteriosclerotic Parkinsonism are discussed The pathology of Parkinsonism is discussed in Chapter IV under the subheadings of idiopathic postenceph litic arteriosclerotic and syphilitic types and intoxication by carbon monoxide and other poisons. In Chapter V the symptomatology is presented in a nicely arranged chart comparing the postencephalitic idiopathic and atteriosclerotic types as to dif ferences in age of onset sex past history prodromata type of onset symptoms and their nature and course Diagnostic signs and tests differential diagnosis and the course and prognosis are briefly pre sented

In the next chapter the present day chemotherapy for Parkinsonism is presented and it is pointed out that drugs plus psychotherapy and physical therapy are the aims in the total treatment of the patient Chapter VII emphasizes that the patient with Parkinsonism needs physiotherapy to keep the joints and muscles as nearly normal as possible and to prevent arthritis chronic myofibrositis and severe and painful contractures. In the total trehabilitation of the patient a good home program is strongly recommended Chapter VIII concerns psychotherapy which is not aimed at cuting this organic disease but is used as an adjunct in treatment to help the patient better adjust to his or ganic disease. In the final chapter the various neurosurgical procedures which have been used in the past and are now being used in an attempt to abolish rigidity and tremor are briefly summarized. No one procedure has become standard the operative effect is more on lessening tremor than rigidity and them of paresis incidentally produced by the procedure.

This book is well organized and indexed. The bibliographies are excellent and the illustrations are clear and adequately labeled. This monograph is highly recommended to the general practitioner and to all interested in Parkinsonism and its treatment.

PROCEEDINGS OF THE FOURTH INTERNATIONAL CONGRESS OF THE INTERNATIONAL SOCIETY OF HEMATOLOGY 473 pages illustrated Grune & Stratton Inc. New York N Y 1954 Price \$10

This volume contains most of the formal presentations at the Fourth International Congress of the International Society of Hematology held September 20 to 27 1952 in Argentina and attended by more than 300 hematologists from various parts of the world It is divided into seven parts each containing the principal addresses of which most are original material and presented in full and communications which of necessity are in abstract form only Although a large part is written in Spanish excellent succinct summaries follow both in English and Spanish

The seven parts cover Neuroendocrinologic regulation of hematopoiesis and hemostasis histochemistry and cellular ultrastricture etiology and treatment of the leukemias manifestations of radioactivity on hematopoietic organs and hemostasis polycythemia hemolytic diseases hemorrhagic disturbances and a miscellaneous part covering classification of anemias unusual manifestations of sickle cell ane mia L E cells and electrophoretic patterns Much of the material is indeed scholarly in its presentation and excellent charts tables graphs and illustrations have been included Many of the subjects are highly scientific although there are enough clinical articles to hold the interest of both the researcher and practicing hematologist

This volume succeeds in impressing the reviewer with the fast broadening picture and the rapid progress being made daily in the complex field of hematology. It is recommended to all who are interested in the clinical laboratory or research phases of this specialty.

-- RICHARD I CRONE Col MC. USA

BABIES ARE HUMAN BEINGS by C Anderson Ald icb M D and Mary M.

Aldricb 2d edition 122 pages illustrated The Macmillan Co New
York N Y 1954 Price \$25

This book was first published in 1939. This means that a book published 15 years ago and now out of print is still important enough to reset and republish. No book in the field of psychiatry can get a better review than that When first published this book was not reviewed by the Journal of the American Psychiatric Association. Since that time the statement in its title has become much more of an accepted fact and babies as thinking feeling and reacting individuals have become a prime concern of psychiatrists pediatricians psychologists social workers.

This second edition of a book that was one of the beacon lights of a more enlightened era in infant and child training and in infant and child parent relationship contains only minor changes from the original text. It presents babies as human beings through an interpretation and explanation of their physical and emotional growth and development

(4) from 180 to 600 or 1 200 mg (from 300 000 to 1 000 000 or 2 000 000 units) of penticilin daily is adequate therapy for a disease as poten titally fulminant and rapidly fatal as acute bacterial endocarditis (page 206) (5) regular digitalization during the first week of each month is beneficial in preventing the occurrence of heart failure (page 580) (6) mortality from pulmonary edema is now far higher than it was 60 years ago (rage 580)

One of the highlights of the text is the emphasis placed on the physic good of the cardiovascular system and on the pathologic physiology of cardiovascular diseases. There is an extensive bibliography from both the American and European literature. This book is a valuable reference work concerning the erablic registraturion of cardiac phenomena.

-WELDON J WALKER LA C L MC, USA

BIOCHEMISTRY by Ab aham C t ow M D d B rn d Sch p tx Ph D
848 pag ill trat d W B Sa d s Co Ph ladelphia Pa 1954

This new text of biochemistry was designed primarily for the first year medical student. In it the authors have attempted to explain the dynamic aspects of biochemistry with minimum reference to fundamental structure reactions and b sic chemical principles of organic and physical chemistry. Although this may have been accomplished more time in the classroom will be required to clarify fundamental chemical relationships.

The authors have described the general subject matter fully and have divided it in a manner similar to that used in current texts on this subject. They have emph sized the many interrelationships between various biochemical processes and the mechanisms involved in regulatory actions particularly metabolism. Special chapters on meth ds of investigating intermediaty metabolism biologic oxidations bioneer getics and high energy phosphare precede those on the metabolism of carbohydrates. Lipids proteins and related substances and lend claity to the discussions on these subjects. These are followed by a chapter on metabolic antagonism which rounds out a lucid discussion of metabolic processes and another on hormones is enhanced by an outline of the current system of nomenclature of the steroid hormones. This is followed by discussions of the accepted facts concerning the secretion and functions of the other hormones.

The text would benefit by more complete discussions and illustrations in the chapters on energy metabolism and the general biochemical as pects of diet In a few instances it may be difficult for the student to find formulas of important compounds that are easily identified viz creatine and creatinine pages 521 and 522 A selected bibliography at the close of each chapter provides an incentive for further reading. The volume is well illustrated and has an index superior to that found in most textbooks—ERENETS M PARROTO MAI MOS USAR

HYPOGLYCEMIA AND THE HYPOGLYCEMIC SYNDROME by A J Kauwa M D American Lecture Series Publication Number 195 A Monograph in American Lectures in Endocrinology edited by Willa d O Thompson M D 67 pages Charles C Thomas Publisher Springfield Ill 1954 Price §3

In this competently printed and bound monograph the subject of hypoglycemia and hyperinsulinism is briefly reviewed from the view point of the practicing physician. Theory is presented only to an extent necessary to explain the background of certain viewpoints of etiology diagnosis and treatment. A short historical review is followed by chapters discussing the causes diagnosis and symptoms of hypoglycemia and hyperinsulinism. The therapy of these conditions is summarized and there is an extensive bibliography.

The fact that hypoglycemia may be present without symptoms and that the true hypoglycemic syndrome may be present without an excessively low blood sugar value is emphasized throughout the book of particular interest is a section discussing the evidence for the presence of a hyperglycemic glycogenolytic factor (HGF) which is believed to be produced by the alpha cells of the pancreas and is considered to be a second pancreatic hormone acting as an insulin an tagonist. The section concerned with the differential diagnosis of the hypoglycemic syndrome is of practical importance and outlines several laboratory procedures which can easily be performed in any well equipped hospital laboratory. The brief reference to the possible use of insulin as a therapeutic agent of functional hypoglycemia is of provocative interest.

The chief criticism of the book is in its brevity. While the volume serves as an excellent short review of its subject bringing the reader up to date with current concepts it seems to leave many questions only partially answered. It is well written throughout and should be a useful addition to the library of the general practitioner the internist or the resident in internal medicine—JOHNE GORMAN Comb (MC) USN

MIOCARDIAL INFARCTION by Iru ng S Wr ght M D Charles D Ma ple M D and Dorothy Fahs Beck Ph D 656 pages illustrated Grune & Stratton Inc New York N Y 19 4 Price 38 50

This book is a detailed report of an extensive study instituted to determine the influence of anticoagulants on coronary thrombost. In a specific investigative plan set up by the Committee on Anticoagulants of the American Heart Association 1 031 cases of myocardial infarction comprised the study of these 442 were control subjects and 589 were treated with anticoagulants Sixteen hospitals and nearly 100 medical investigators throughout this country participated

Considerable data relating not only to anticoagulants and their use but also to many other aspects of myocardial infarction were accumulated during the course of the study. This material has been exception ally well correlated. There is much detail with numerous charts. The

first four chapters present the background origin purpose and plan of the investigation and the composition of the sample cases The remaining nine chapters deal with the clinical picture course of the illness findings management thromboembolic and hemotrhagic com plications and conclusions An excellent description of the anticoar ulant regimen with details of usage is to be found in the appendix The book is well indexed and there is an extensive and useful bibliography

The original premise that anticoagulants might favorably influence the outcome of an acute attack of myocardial infarction is reported as confirmed because in this series 23.4 percent of the controls died in contrast to 16 percent in the anticoagulant treated groups. However many competent investigators and cardiologists are not in full agree ment with all of the conclusions presented in this report. In particular there is considerable disagreement with the conclusion that virtually all myocardial infarction patients who survive long enough for hos pitalization and diagnosis should receive anticongulant therapy Never theless the extensive material on myocardial infarction which is so well organized well written and clearly presented should be of distinct value to all those who may have to deal with the disorder

-IOHN H WARD 1 C pt (MC) USV

GALEN OF PERGAMON by G org S t n 112 p ge Pr Law c k s 1954 P \$2 50 ty f k

This is a comprehensive and concise essay on Galen one of the greatest physicians of all times. The author is an eminent historian of science who has succeeded in recreating the world of Galen He draws from diverse disciplines such as general history architecture and history of philosophy and medicine to enrich the picture of his subject

Galen's career and person lity are presented in their relation to the general cultural history of his time. An extraordinarily producti e person in addition to being a busy and successful practitioner of medicine he was an astute observer and investigator a famous lecturer in his day and a prolific writer In his life span of 70 years he wrote several hundred books and treatises covering practically the whole range of human knowledge including the first autobiography of any note His influence was enormous Some of his writings formed an integral p it of the medical curriculum for the next 1 500 years

Today some of Galen's statements appear infantile in the light of our more mature knowledge but even genius has its infancy. Are not Galen and his theories a symbol of greatness of the Greek spirit which did not know as yet a compartmentalization of knowledge and specu lation? Has not the division of science from philosophy and theology proved to be fateful in our days? The reader will have to decide for himself Dr Sarton in his excellent little book has provided a guide

-HELMUTH SPRINZ LE COL NC USA

A TENTROON OF CHEMISTRY by Stella Goostray R N B S V Id sry J Rae Schwenck A B Ch E 7th edution 426 pages illustra, Macmillan Co New York N Y 1954

As in previous editions of this text, the authors have presen a fundamentals of chemistry in a popular and interesting manner. The purpose has been to discuss material that would be of service to are nurse not only in the practice of nursing but also in her understanding of the basic sciences and related phenomena. In addition to achieving this goal, the authors have produced a text which should be materially useful in medical technicians courses.

The subject matter has been well chosen and a factual account of a mortant aspects of inorganic organic and biochemistry presented as a manner that can be easily assimilated by the beginner. The surveyer a precede each chapter should aid the student to grasp the material as a respect of the summatter and questions following early as presented therein. The summatters and questions following early as a reasonable of the beginning technician the chipter on a confusing it is because of its brevity. The added chapter on radioactivity is a consistent of the material is presented in a manner within the error, the beginner—IRVING GRAY IL Col. MSC USM

FACTORS AFFECTING THE COSTS OF HOSPITAL CARI Volume 1 (cing Hospital Care in the United States edited by John II Illa pages illustrated The Blakiston Co., Inc. New York !! () / Price \$4

This volume is one of three presenting the detailed fin file the recommendations of the Commission on Financing of Hospital (4, 4) Organized in 1951 under the sponsorship of the American file 1, 1) Association the Commission had as its objective to atticly the experimental dequate hospital services and to determine the left high tems of payment for such services

This book gives the results of a detailed and thorough inventionally of factors affecting the rise in hospital expenditures which account of the the increase in quantity and quality of hospital services in thin clining The influence of expanded services as well as the higher contact later and materials were considered along with possible menns of kertly, costs to a minimum without reducing the quality of services Detailed studies of costs in the nonprofit general hospitals were made 1 in the findings discussions and recommendations made are applically to other type hospitals. The growth in complexity of hospital services, the changes in hospital financing the increase in numbers and utillentich of facilities the growth of outpatient services and many other factiff are reported in detail. Among the other factors are the influence (116 flation increase in population, increased rate of admission and lo creased payrolls The influence of managemen efficiency and detirate in len th of patient stay in reducing costs of hospitalization are also discussed Excellent detailed statistical charts are given and thene together with the final summary and recommendations give the reader a quick grasp of the exhaustive study made and the problems still to be solved

With this volume hospital administrators have an excellent opportunity to learn what leaders in the field consider to be the major hospital financial problems how these problems developed and their significance in various hospitals. At the same time one learns the approach that has been taken by various hospital groups to overcome and hold to a minimum the effect of the problems discussed

-IAMES T MCGIBONY C I MC USA

THE EPILEPSIES by H Gall. Amr. Letur St N mbe 204 A M grph Th Bet D Letur nSgty dtdby McblEDBly MD of Amr an Spurl g M D 150 p g Il at ted Ch I C Thm s Publ h r Spr gf ld, Ill 1954 P \$475

This conprehensive monograph contains much original material and a review of the literature Reviewing and summarizing the subject of the electroclinical correlations of ep lepsy in a simple and didactic manner the uthor has given full credit to the contributions of his predecessors and contemporar es

The present knowledge of the epil pries is contained in this ready reference for clinicians and students and it contains additional inform at on n eded by those seek ng board certification the location of which would require many hours of searching in the literature. The originality in thinking and brilliance in writing h s been ably preserved in the translation

This monograph contains what the average docto wants to know about epilepsies. This book is well indexed and adequately illustrated and contains chapters on electroclinical classification clinical analysis physiologic interpretation etiology anatomic pathology diagnosis and treatment. It fulf lls the purpose for which it was written and should be in every library and carefully read by the e who treat patients with the convulsive diso ders - IOSEPH I HORNISHER Col MC USA

UNIVERSITY EDUCATION FOR ADMINISTRATION IN HOSPITALS A Rep t fth Cmm ione Ur ty Edu ton a H ptal Adm 1954 Phlish d by Am n Coun l Edet 1954 199 pg Pi \$3

There are 13 existing degree granting university graduate programs in hospital administration, all but one of which have been established in the last 10 years. Because this field of education is new there is but little uniform ty in the programs and many are still frankly expenmental. An independent commission was created to make an appraisal of these activities with establishment of criteria for future planning This book which is sharply critical of many of the existing programs presents the report of the commission. It is almost certain to give tise to controversy

The Commission charges that there is no common foundation required for graduate work in hospital administration. Too many students are being accepted merely on the basis of experience in hospitals. These include ministers doctors nurses military career officers psychologists and social workers. Physicians and nurses will not like the Commission s recommendation that only those persons throughly peaced by business and management courses as undergraduates be accepted as graduate students in hospital administration. Acknowledging that such policy would rule out physicians and nurses the report states that these groups are not prepared by their medical or nursing training alone to participate in advanced work in administration.

The book is well organized and is well documented with 20 supporting tables Of little interest to other than those associated with training programs for hospital administrators it could well be regarded as a definitive guide to education in that field,

-WILLARD C. CALKINS Capt (MSC) USY

CYSTIC FIBROSIS OF THE PANCREAS IN INFANTS AND CHILDREN by Cha les D May M. D American Lecture Series, Publication Number 234 A Monograph in American Lectures in Pediatrics Edited by John A. Anderson M. D 93 pages illustrated Charles C Thomas Publisher Springfield, III. 1954 Price §3

This complete and well referenced monograph contains a great deal of information of value to physicians concerned with the diagnosis treatment and long-term care of patients with cystic fibrosis of the pancreas Practicing pediatricians will find noteworthy the three chapters on clinical manifestations diagnosis and treatment Students in this field will be particularly interested in the chapters on puthogenesis and physiologic consequences

This is a readable well printed book with clear illustrations that are pertinent and fully explained. The case reports cover all the different manifestations of the disease. The index and bibliography are excellent. This is a worth-while publication by one of the foremost authorities in the field and has a definite place as a reference book in any up to-date medical library.—WILLIAMI NEINER, Lt. Comb (MC) USY

THE PRACTICE OF SANITATION by Educard Scott Hopkins and Wilmer Henry, Schulze 2d edition 466 pages illustrated The Williams & Wilkins Co. Baltimore, Md. 1954, Price 88

This volume is written "as a guide in environmental sanitation procedures for the training of physicians seeking to become health officers nurses—sanitarians—and students of sanitary engineering—and to bring together in one volume the pertinent facts comprising sanitation practice as it is today in the United States—It should therefore be judged in this light and not as a self-sufficient text

This edition has expanded its former 14 chapters into 23 and some of the deficiencies of the first edition have been corrected. Reference

cuations have been increased and the problems of vater supplies and sewage disposal have been subdivided so that the approach to their solution in urban and rural areas are discussed s parately

The first five chapters concern the fundamental concepts and principles and include an early discussion of administrative practice. The ensuing chapters are simply and conveniently organized and touch on all the essentials of sanitation practice. Added chapters on air pollution housing industrial sanitation public transportation and camps and motor courts enhance the value of this book.

On the whole this book will be valuable to a variety of groups and in particular to the young medical officers on duty at stations where there is no experienced preventive medicine officer. It is written in a clear concise and straightforward style is well illustrated and can provide the basis for organized extra instruction for informal study and as a ready reference for specific items of information

-ADAM J RAPALSKI C L MC USA

SELECTED WRITINGS OF FLORENCE NIGHTINGALE mpled by L cy
R dg ly S ym M A S. R N 396 pg Th M mullan Co N w
Yok N Y 1954

This interesting volume f its best in the classification of historical reference books—the only one on this subject available. The book is a collection of writing that deal with nuising honoring the centenary of Miss Nightingale's departure to nuise in the Crimean War and bringing to the public a better deeper understanding of the profession she pioneered. The format makes reading easy and the preface to each work is especially valuable. This book is one that should be included in the library of every school of nuising.

The writings cover a period of 36 years and re arranged in chrological order without regard to importance. Each work is prefaced by activation of the circumstances concerning the writing and its special significance. A majority of the works are unknown to modern readers some having been written originally for British Government publications or for Congresses. There is a suggested additional reading list whereby the more avid reader can compare the present version with the original works.

This volume is a valuable source of historical material as a reference for comparison with present day thought and use

—GLADYE PURRE Cond. (NC) USN

FIXED PARTIAL PROSTHESIS by Jo ph E. Eut g D D S 208 p g s 482 ll tt tom L & F b g Ph l d lphi Pa. 1954 Pr \$6

This book fulfills the need for an accurately illustrated summary of technics on the subject and s a step-by step guide to all types of preparations of fixed restorations. The whor covers the subject completely beginning with a clear and concise conception of the biologic

as well as the mechanical requirements. In an easy to read outline, he devotes the first five chapters to the all important preliminary requirements examination both radiographic and clinical, with each oral condition graphically illustrated indications and contraindications for fixed partial prosthesis and the important consideration of adequate oral gratment prior to the technical construction phase.

All types of abutments and retainers are logically discussed with each step of the procedure graphically illustrated. Concise explanatory notes accompany each step and illustration. Throughout the entire book the material is presented without the use of lengthy superfluous text and is well organized.

The more recent acceptance of the hydrocolloid technic for indirect inlays and fixed bridges is dealt with in a complete chapter listing 39 steps to observe Investing casting and soldering are outlined with well chosen illustrations of both correct and incorrect procedures. These are well presented provided the reader uses the same technic and materials for investing and wax elimination. The author uses the thermal expanding technic and does not mention the hygroscopic technic. The final chapter deals with case design illustrating basic designs which can be used in many combinations.

The author has drawn freely from many sources including current literature and has given full credit in his bibliography of 33 references. This is an excellent and practical rendy reference for advanced dental students and dental practitioners.—THEODORE E. FISCHER, Col. USAF (DC)

BIOLOGY by Claude A Villee 2d edition 670 pages illustrated W B Saunders Co Philadelphia Pa 1954 Price \$6 50

This textbook is the outgrowth of the author's teaching experience at the University of North Carolina and was written to convey the concept that biology is a science which deals with all of the diverse as pects of the myriad forms of life. In this revised second edition, he has emphasized the dynamic and experimental aspects of biology. The extent to which modern biologic research has succeeded in explaining the phenomena of life including the comparative and evolutionary as pects of biology and the physiologic and chemical facets of life have been stressed. This is a valid approach for the parts of biology most interesting to a beginning student and most useful as a part of a gereal education are those that explain how organisms particularly human beings function and how they came to be as they are

The author has successfully presented the information a student should acquire in a college course in biology without overloading him with facts. The book opens with a new discussion of the scientific method the design of experiments and the sources of scientific information. Part I has been completely rewritten to integrate the discussion of basic physics and chemistry with their biologic applications. A new chapter concerns cellular metabolism in which the many similarities

between bacterial green plant and animal cells at this fundamental level are emphasized. The information on the enzymes and their properties has been greatly expanded and an account of the enzymes reactions which provide the cells with the energy for all their diverse activities has been added as well as a chapter on biologic interrela tionship describing the evolutionary and ecologic relations of plants and animals. Included are the newer concepts on insect metamorphosis colonial insects and insect behavior. The chapters on infectious dis eases human inheritance reproduction and embryonic development are concise and present the newest information in these subjects

This book is authoritative and well written. It is intended as an introductory text in a course in college biology however it should prove to be a valuable sourcebook for teachers and researchers in the health sciences -MAXWELL DAUER, Lt. Col. MSC. 115A

COLOR ATLAS OF PATHOLOGY V 1 m 2 Prepar d u d th usp th U S Nav 1 M d 1 S bool of th Nat 1 N val M d c 1 C t B th d Md Ill trat d w th 1 032 f gur 1 343 pl t 450 p ge J B L pp tt Co Phil d lphin P 1954 P: \$20

In this second volume the pathology of the endocrine system (includ ing pituitary thyroid parathyroid adrenals and pancreas) female diseases and obstetrics (including rep oductive organs and breasts) male genital tract and skin is presented. The material is as in the previous volume contributed from numerous sources including the U.S. Naval Medical School Georgetown University Medical School and the A med Forces Institute of Pathology A third and final volume of this system of pathology is currently in process of compilation

The original plan in preparing these three volumes of pathology in color atlas form was to give the medical profession a comprehensive concise and realistic source of reference with reproductions in full color which would present to the student the clinician and the labora tory diagnostician a readily usable and adequate standard of compari son as a guide for study of gross and microscopic findings. It is believed that this objective has been attained beyond all expectation in this second volume

The photography of the gros specimens and the low and high-power microscopic fields 1 excellent The case histor es are concise and to the point and the descriptions of the gross and microscopic pictures are easily followed and in most cases show the features described with remarkable clarity. It is believed that these three volumes are a must for pathologist resident in pathology and many clinicians. These volumes are p oneers in this particular field and have set the standard that will materially change the trend in presenting information in pathology in the future -DWIGHT M KUHNS Col MC USA

New Books Received

Books received by the U.S. Armed Forces Medical Jou nal are acknowledged in this department. Those of greatest interest will be selected for review in a later issue.

- FLIGHT SURGEON'S MANUAL Air Force Manual Number 160 5 Department of the Air Force Washington D C 712 pages illustrated Air Uni versity U S Air Force School of Aviation Medicine Randolph Air Force Base Randolph Field Tex July 1954
- OPERATIVE ORTHOPEDIC CLINICS by Lewis Gozen M D 1 A C S Assistant Protessor of Orthopedic Surgery Colley of Medical I vange lists Los Angeles Calif Staff Orthopedic Honpital, Wadawett (en eral Hospital Veterans Administration Los Angeles (et tal firefine Cedars of Lebanon Hospital Los Angeles Tubercultala Capit the Los Angeles Consultant United States Public Health 1910 M mter, American Academy of Orthopedic Surgeons and Alula Buch at M Chief of Staff Oethopedic Hospital Los Angeles Atter they California Hospital Los Angeles Orthopedic Connultant, Datatte of Public Health State of California Member American Academ 1 Orthopedic Surgeons in Collaboration with Paul I: McMilleter M 1) F A C. S Clinical Professor and Acting Head of Department of Out pedic Surgery University of California at Los Angeles Medical telectic Senior Consultant in Orthopedic Surgery U S Veterana Illia Ital, West Los Angeles Attending Orthopedic Surgeon Hospital (!! a (#1) Samaritan Ch Idren's Hospital Cedars of Lebanon Hospital Hallywill Presbyterian Hospital and Sr. John's Hospital Orthopolic (company to Harbor General Hospital Member American Orthofedic Association and American Academy of Orthopedic Surgeons 379 Paper 110 Illus trations | B Lippincott Co Philadelphia Pa 1955 lifer 116
 - MEDICAL TREATMENT OF MENTAL DISEASE The Toxic and Organic for of Psychiatry by Dan et 1 McCartby M D LL D Consulting the rologiest Philadelphia General and Norrissown State Heightigh State are Trustee University of Pennsylvania formerly Medical State of Farmount Farm and Roseneath Farm and the Neutria service Schanes Hospital Philadelphia Pa and Lufersity of Interest of English and Consulting M D europsychiatriss Wilmington General Hospital and Country Psychiatrist St Francis Hospital Wilmington Del & timedy (Milha) Director Weinersville State Hop pail and member I sychiatris Path, Philadelphia General and Jefferson Hospitals and Institute In the Chiarty Jefferson Jed cal College with sections 19 select cultillate the 653 pages illustrated J B Lippincott Co I biliadelphia, Int., 10 Price 317
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 pages 138 f gur nd 96 ll tr ti (22 pl t) in f ll 1 J B L ppine tt Co Ph I d Iphi P 1955 P 1 \$27
- DOCTORS IN THE SKY Th Story of th A M d 1 A so gat J B fod M D Clai Md I Crp U ted Stat A Fo 326 pg ill trd Chl C Thm Pblh Sp af ld Ill 1955 P e \$8 75
- HYPEROSTOSIS CRANII St w t M 1 Syndr m Metabolic Cra opathy Mrgag s Syd me StwrtMrlM re Sydrome (Rito) L Syn dr me d Morgag Morel by She wood M M D Professo Em itus fRdilgy Whngt UrtyShlofMdc FmrDirectr f The Edw rd Mall krodt I ttu f R d logy St L Mo 226 page ill trtd Chrl C Thma P bl hr Sp gf ld Ill 1955 P \$10 50
- PERIPHERAL VASCULAR DISEASES 2d dit o by Edg V All B S MAMD MS nMdc FACP Sct fMdc Mayo ClicP fe f Mdie Mayo Fdti Gadt Shl Uvr ty f M nn ta D pl mat f th Am ric Board of I ternal Medicin N Iso W Bak B A M D M S M d F A C P
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 ca Boad of I r mal M d c ne Edg A H J B S M A M D M S in M diet FACPS tio fM di 1 Mayo Fudt Graduate ShlU ty of Mi tawth Act nth May Cli d My F und t n 825 page 316 ill stratio s 7 in color W B Sau der C Ph lad lph P 1955
- SURGICAL NURSING by Eld udg L. Elua M. D. SC. D. F. A. C. S.
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- ESSENTIALS OF MEDICINE The Art and Science of Medical Nursing by Charles Phillips Emerson Jr M D Associate Professor of Medicine Boston University School of Medicine Member Robert Dawson Evans Memorial Laboratory Visiting Physician and Director of Clinical Labor atories Hematology Clinic and Radioisotope Division Massachusetts Memorial Hospitals Consultant in Hematology U S Public Health Service Hospital Brighton and Attending Physician Veterans Administration Hospital Boston and Jane Sherburn Bragdon R N B S Associate Director School of Nursing Vassachusetts Memorial Hospitals and Clinical Assistant in Medical and Surgical Nursing Boston University School of Nursing 17th edition 922 pages 268 illustrations including 19 subjects in full color J B Lippincott Co Philadelphia Pa 1955 Pitce 4475
- TEACHING MEDICAL AND SURGICAL NURSING by Jame Sherbu n Bragdon
 R N B S Associate Director School of Nursing Massachusetts
 Memorial Hospitals and Clinical Assistant in Medical and Surgical
 Nursing Boston University School of Nursing Co-author of Essentials
 of Medicine by Charles P Emerson M D and Jane S Bragdon R N
 and Lilliam A Sholits R N B S M S Consultant in Medical and
 Surgical Nursing Bryn Maw Hospital School of Nursing formerly
 Assistant Professor of Surgical Nursing Yale University School of
 Nursing Supervisor of Operating Rooms Hospital of the University of
 Pennsylvania Co-author of Surgical Nursing by Eldridge L Eliason
 M D L Kraeer Ferguson M D and Lillian A Sholits R N 70
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- ANALYSIS OF DEVELOPMENT edited by Benjamin H Willier Professor of Zoology Johns Hopkins University Baltimore Md Paul A Weiss Member Rockefeller Institute for Medical Research New York N Y formerly Professor of Zoology University of Chicago Chicago Ill and Viktor Hambu ger Professor of Zoology Washington University St Louis Mo 735 pages illustrated W B Saunders Co Philadelphia Pa 1955
- REACTIONS WITH DRUG THERAPY by Harry L. Alexander M. D. Emeritus
 Professor of Clinical Medicine Washington University Medical School
 Former Editor of the Journal of Allergy 301 pages illustrated W. B.
 Saunders Co. Philadelphia Pa. 1955
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 H Read School of Home Economics Oregon State College 2d edition
 297 bases illustrated W B Saunders Co Philadelphia Pa 1955
- DISORDERS OF CHARACTER Persistent Enuresis Juvenile Delinquency and Psychopathic Personality by Joseph J Michaels M D Boston Mass 148 pages Charles C Thomas Publisher Springfield Ill 1955 Price \$4 75
- INTEGRATION OF RELIGION AND PSYCHIATRY by # Ea l B ddle
 M. D. F. A., P. A. Clinical Director Men & Division, Philadelphia
 State Hospital Philadelphia Pa Formerly Assistant Superintendent of
 Wernersville State Hospital Wernersville Pa 171 pages The Macmillan
 Co. New York N. Y. 1955 Price \$3.75
- NTRODUCTION TO THERMODYNAMICS OF IRREVERSIBLE PROCESSES by I Pringo Re D Sc Professor Faculty of Science University of Brussels Brussels Belgium American Lectures Scries Publication Number 185 A Monograph in American Lectures in Biochemistry and Biophysics edirectly by Bildergroen Ir (Delft) M A Ph D Sandoz Ltd Basle Switzerland 115 pages illustrated Charles C Thomas Publisher Springfield III 1955 Price \$4.75

- HANDBOOK OF TREAT ENT by H old Th mas Hyma M D Auth r of Int grated Pra r c f Med c and Handbo k of D fir rent 1 D goo is 511 pag J B L pp neott Co Ph lad lphi P 1955 P cg \$3
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- SOCIAL ORGANIZATION by Soif A G R e h D cto Laboratory n U ban Cultur Occ d tal C ll g Doubl d y Sh in Stud sin S ology SSS 9 Con ting Ed to C h I H Pag Pr fe or of Sociology Sm th Colleg 68 pages D ubled y & Co Inc Gard a City N Y 1955 Pic = 810 S
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 dr. s. H. p. tal. Columba. Ohio. 351 pag. ill. trat. d. Th. Y. r.
 Book. P. bl. h. s. line. Che. go. 111. 1955.
- STRESS SITUATIONS did by S muel L bman, M D M did D to
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Hemins, A Young M Y Suchet J and Rowe A J P Penicillin

Telliming 1 Journ 3 Journet 3 and nowe 1 Femilian Content of blood erum after various do es of penicilla 1 various routes Lancet 2 (1-CM No. 11 1944 Cabot RC Permenou and econdary anemy chlorosi and leukemy In O for W (editor) Wodern Wedierne 31 edition 1 ex C Febrer 1 hindelphia Pa 19 (Vol 5 pp 33-100

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UNITED STATES ARMED FORCES MEDICAL JOURNAL

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UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON 1955

Monthly Message

It is with great pleasure that we welcome Dr Edward Harvey Cushing as Deputy Assistant Secretary of Defense for Health and Medicine Dr Cushing has been an alternate member of my Civil ian Advisory Council for the past year and served as Acting Deputy during my five weeks absence in the Far East last fall the commenced his official duties on 3 March 1955 and brings to the office a wealth of experience in clinical nedicine research active duty in both the Army and Navy and in the knowledge of government medicine

Dr. Cushing received an A. B. from Yale University, in 1919 and an M. D. from Harvard in 1923. Following internships and residencies in the Presbyterian and Bellevue Hospitals in New York and Lakeside. Hospital in Cleveland he entered into the active practice of medicine in the latter city in 1978, and became Associate Clinical Professor of Medicine at Western Roserve Me served in 1916; in the Field Artillery in the Mexican Border Campaign and in World War I during World War II be served as commander and captain in the Medical Corps. U. S. haval Reserve from 1940 to 1946; receiving the United States Typhus Commission Media. From 1946 to 1952 he was Assistant Chief Medical Director of the Veterans Administration in charge of research. He is a member of the American Medical Association the American College of Physicians the American Clinical and Climatological. Association and other medical organizations.

Dr Cushing 8 association with this office will add much to its potentialities

FLANKIS IS THE FRANK BERRY MD
Assistant Secretary of Defense
(H alth a d M dical)

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Foreword

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FRANN B. BERRY M D

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MAJOR GENERAL GEORGE E ARMSTRONG

Surgeon G er l L i d Stat Army

REAR ADVIRAL BARTHOLONEW W HOGAN Surg n Ge al U ted Stat h vy MAJOR GENERAL DAN C. OGLE Surgeo G I U t d St t s A F

United States Armed Forces Medical Journal

Volume VI

May 1955

Number 5

THE PROBLEM OF PULMONARY INSUFFICIENCY IN DISABILITY RATING

A Critical Evaluation of the Need for a Physiologic Classification

JAMES C SYNER Captain, MC USA
CHARLES S CHRISTIANSON Lieutenant Colorel MC USA

THE QUANTITATIVE evaluation of pulmonary function by use of physiologic tests is becoming increasingly important. Numerous methods are available and we have discussed some of the procedures in a previous article. The application of laboratory studies to supplement clinical evaluation in providing an objective appraisal of pulmonary disability is particularly important in the military service. Evaluating the subjective complaint of "dyspnea" in terms of degree of disability by history, physical examination, and roentgenograms of the chest can prove very controversial

In military medicine we are continually confronted with two major responsibilities in the evaluation of patients with diseases of the chest (1) The profiling of persons following illness or on coentgonographic detection of abnormalities for physical fitness for either limited or general duty and (2) the profiling of persons as to their physical fitness who are presented to physical evaluation boards for decisions regarding their type and degree of disability for retirement compensation

The problem of determining these situations realistically and accurately is a tremendous one, and in the interests of the armed services and the person involved a full measure of accurate and intelligent work must be done. The use of pulmonary function tests as aids and as supporting evidence in these proceedings, however, has been very limited. As a result the accumulation of controlled, organized, and standardized data has not been accomplished. We have been unable to find reliable tables for the disability profile of pulmonary insufficiency based on physiologic data.

It has been our experience and that of many other workers in the field 2- that physical examination and chest roentgen ography are limited and often unreliable in estimating the status of pulmonary function for disability rating A patient with diffuse radiologic densities for instance may have little or no dis turbance in pulmonary function Conversely patients with rela tively little or no radiologic evidence of disease may have se vere pulmonary insufficiency or even complete pulmonary dis ability Far too often however, the anatomic status is considered first last and only Once the anatomic status of the respiratory apparatus has been defined all kinds of conclusions are drawn regarding its functional status Usually such an evaluation stands as the final evidence for retirement induction general or limited duty status the type of surgical or medical treatment indicated and the diagnosis of disease An organized study to investi gate this problem is essential in order to meet the responsibil ties of the medical mission in our country a defense effort

One reason for the limited use of pulmonary function studies has been the wide variation in results obtained in normal persons. This has been a source of frustration and discouragement to many physicians. Only now are we appreciating that much of this was due to a lack of standardization in equipment and methods. Any program of study for working out this recessary classification of pulmonary insufficiency would have the task of determining the specifications and standardizations of procedures for use in the armed services.

Another reason for variation has been the tendency in the past to evaluate with a single test a group of supposed normal persons as judged by history physical examination and routine reentgenograms of the chest he single test however can adequately define the status of pulmonary function and a group of tests is required to screen the various mechanisms which rake up integrated function. The combination of tests which provide the most accurate and adequate screening of functional status has never been defined nor has an large well controlled study been carried out to establish the answer Reports appear in which small numbers of patients were studied but at this time the results cannot be regarded as an authoritative basis for disability profile duty disposition and retirement compensation of military personnel.

A third area of significant shortcoring has been the almost complete absence of information on the relationships and correlations between the findings of pulmonary insufficiency as revealed by physiologic testing and physical disability classi fication Adequate controlled study, definition of concepts. and synthesis of new ideas is most certainly needed

CASE REPORTS

The following case reports illustrate typical situations in which pulmonary function studies offered a significant contri bution in certain problems by providing the evaluation board with evidence for the best possible decision. Cases of this type are of common occurrence and provide for a large part of the function studies carried out in the medical chest clinic at this hospital

- Case 1 A 60-year old man was hospitalized for medical evaluation prior to statuatory retirement. His chief complaints were exertional dyspnea on minimal activity easy fatigability and early morning productive cough The symptoms were described by the patient as slowly progressive and annoying Originally they were thought to represent manifestations of arteriosclerotic heart disease and myocardial in sufficiency. He was studied in the cardiac clinic but his cardiac status was considered normal During fluoroscopic examination limitation of the diaphragms was noted and he was referred to the medical chest clinic for further evaluation. The results of the pulmonary function studies are shown in table I and are indicative of a moderate degree of pulmonary insufficiency of a ventilatory type primarily obstructive in nature with a significant degree of emphysematous decompensation This conclusion was supported by the following changes
- 1 Vital capacity was slightly reduced to 85 percent of predicted normal This single conventional determination however provided little if any insight into the nature and degree of the physiologic abnormality in this patient
- 2 The ratio of the residual air to total lung volume was 45 percent a significant increa e over the predicted normal of 30 percent. This indicated a hyperinflation of the pulmonary volumes which was com patible with a moderate degree of emphysematous decompensation
- 3 The maximum breathing capacity was diminished to 74 percent of predicted normal Of equal importance was the character of the respiratory tracing obtained during the test performance. There was a significant shift of the midpulmonary position to a maximum inspiratory level demonstrative of the air trapping and hyperinflation that are characteristic of obstructive emphysema
- 4 The character of the helium dilution curve indicated a delay in the intrapulmonary mixing that is characteristic of the defect in dis tribution associated with the vemilatory impairment of emphysema

5 The air velocity index of 0 87 further substantiated the findings and conclusions of an obstructive type of pulmonary insufficiency

TABLE 1 P Imonary funct on study on f us probl m cas

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P 1		Р	2	Р	3	Р	4
4 100 3 400		4 800 5 000		4 170 4 900			
1 900 2 800		1 400 1 450		1 700 1 860			
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(SIPD) Standard I appratur P tur Dy.

Comment The addition of these pulmonary function tests to the study and evaluation of pulmonary emphysema provides a presentation of the patient's symptoms in terms of the functional dynamics. These tests permit a clearer more emphatic concept of the disease process and associated irpairments and bring to light the error of confusing cardine and pulmonary insufficien cy. Their results emphasize that a serious degree of pulmonary insufficiency can be a major problem in persons coming before physical evaluation boards. They provide a means for rating degrees of pulmonary disability, and a basis on which standard ization in the classification of disability can be made Finally, the evaluation of the process serves the patient by bringing to light a pulmonary condition that can be as serious, as disabling. and as progressive as any other chronic disabling disease

Case 2 This 21 year old man was hospitalized to determine whether or not he was fit for full military duty. His complaints were limited to the respiratory system and consisted of episodes of wheezing res pirations cough and shortness of breath. He stated that this condition had been present for several years and was aggravated by cold damp weather and seasonal changes He had been extremely active in pro fessional sports was a topnotch performer and had been able to maintain a position on a professional ball team. Findings of his phys ical examination were normal at the time of admission and remained so throughout his hospital stay A roentgenogram of the chest was normal Pulmonary function studies were carried out and the results which were entirely within normal limits are shown in table 1 There was no evidence of emphysematous decompensation as indicated by the normal residual air volume of 1 456 cc which represented 23 per cent of the total lung volume. An adequate ventilatory capacity was indicated in a maximum breathing capacity performance which was 92 percent of the predicted normal The absence of pulmonary air trapping and respiratory outflow obstruction was indicated in the timed vital capacity study which demonstrated that 96 percent of the vital capacity was displaced within the first three seconds. The character of the respiratory tracing showed a normal inflow outflow pattern with no disturbances of rate rhythm or stigmata of expiratory delay

Comment The important features of normal residual air volume adequate maximum breathing capacity, normal timed vital capac ity relationships, and absence of respiratory outflow obstruction proved of fundamental value in the proper disposition of the pa tient to full military duty. In the presence of any significant bronchospastic disease, characteristic changes in the dynamics of ventilatory function can be expected When the problem has been chronic, abnormalities in the ratio of residual air to total lung volume are usually present This latter finding is of par ticular value in the evaluation of the patient with asthma during a so-called asymptomatic period Not only do such function studies aid in the proper evaluation of the immediate situation. but through careful follow up valuable information can be obtain ed regarding the natural history of various types of bronchospas tic phenomena To have standardized methods available for the quantitative evaluation of the subjective complaint of "dyspnea" would aid in the disposition of many types of "motivation" prob lems in the military service

Case 3 A 34 year old man was admitted to determine his fitness for full military duty. The problem was one of diffuse bilaterally sym metrical pulmonary fibrosis residual from a nonspecif c pneumonitis About eight months before the present admission he had had a mild febrile illness characterized by dry cough of four days duration weak ness elevation of temperature for three days and slight pain in the left side of his chest for two days. Ten days prior to the onset of this illness he had been working in a dusty attic. At the time of admission a roentgenogram of the chest showed a bilateral diffuse symmetrical nodular infiltration. An inclusive battery of laboratory studies failed to disclose a causative agent. Over a period of several weeks the patient improved in general well being and toentgenograms taken periodically showed resolution of the infiltrati e process with residual d ffuse bilaterally symmetrical fibrosis of a moderately severe degree The patient was discharged to limited duty for a six months trial At the time of admission for re-evalution he was entirely asymptomatic and afebrile Repeat roentgenograms demonstrated the previously de scribed diffuse b I terally symmetrical fibrosis to be essentially unchanged Pulmonary function studies which were entirely normal are reported in table 1 Arterial oxygen saturation at rest and after heavy exercise was normal. The patient was returned to full duty

Comment This case indicates that pulmonary function and anatomic changes demonstrated by roentgenograms of the chase may not run a parallel course. The experience is consistent with findings reported by Wright and Filler' who showed that pulmon are fibrosis even though extensive may be entirely benign in its effect on functional status. This officer was highly motivated to remain on active duty and possessed skills and training great to remain on active duty and possessed skills and training great to near the state of the force the results of his functional capacity were known there was considerable doubt as to whether or not he should be allowed to continue on active duty in addition to clarifying the situation as to duty status essential information was documented about the disease process itself and the patient was reassured to learn that all measurable functions were within normal limits. Follow up evaluation will provide important data on the natural history of this disease process.

Case 4 A 27 year old man was admitted for cardiac evaluation be cause of complaints of che r pain hyperventil tion dyspine and awaken in from ound sleep with sensations of suffocating Cardiac evaluation was entirely normal Because his respiratory rate at times ranged from 45 to 60 excursions per minute medical chest evaluation was requested. The history was negative for pulmonary disease but revealed episodes of anx ety psychosomatic symptoms and neuras then is Fluoroscopic examination showed normal excursions in both leaves of the di-tip m Pulmonary function studies on several occasions demonstrited marked varietion in values. After a satisfactory

patient physician relationship had been established the patient completed a performance with all values within normal limits. The character of the respiratory tracing indicated anxiety with characteristic irregular rhythm featuring numerous deep recurring sighing respirations. With final integration and evaluation of all available in formation the condition was considered as being primarily psychiatric and the patient was transferred to the psychiatric section for further evaluation and therapy.

Comment The studies were of fundamental value in ruling out the presence of organic disease They present a means for study ing nonorganic types of dyspner associated with anxiety and respiratory neurosis Although the role of the respiratory system in the somatization phenomena is well recognized, clarification of the individual situation often poses a difficult problem Fur thermore, because of the serious implications of cardiac disease in young men, as much quantitative information as possible about physiologic status should be obtained When anxiety is released through the respiratory system, certain aspects of pulmonary function studies can serve to document and demonstrate features which are not always well clarified by an interview or other conventional means. The character of the respiratory tracing is particularly valuable in providing a permanent record of the irregularities of rhythm in various testing periods, and as to how they correlate with mood swings knowledge of the variation in ventilatory values gained during separate testing periods is most valuable, for seldom will one encounter in organic disease the wide range of performance observed in functional problems is particularly interesting to observe changes in performance which are associated with an improving patient physician relationship

SUMMARY

Problems relating to the evaluation of pulmonary function are an outstanding feature of military medicine. To adequately carry out this responsibility physiologic studies must be available to medical installations at all hospital levels.

Experience gained at this hospital leads to the conclusion that, at present, physiologic testing in diseases of the chest has not received its full share of attention and application. A controlled study is needed to determine the most effective manner in which available methods for pulmonary function study can be used in military medicine. An adequate battery of studies for screening should be defined. In particular, data on the physiologic classification of pulmonary disability should be accumulated and standardized to aid in disposition of military personnel either to duty or retirement with proper compensation for physical disability.

The four cases reported in this article illustrate the type of problem which arises in evaluating pulmonary function and the contribution which physiologic studies make in evaluation

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THE DOCTOR WRITES

Why do doctors write? The motives of some are noble those of others are not There is first of all the anx cty to share with one s colle gues worth while nformat n. Such a desire is s cred and should not be pro fa ed for dissemination of knowledge is ess nitial to the prog ess of medicine H w frequently however does not the urge to show off th writer s knowledge exceed his cagemess to improve that of the reader!

Then there is the itch to write in order to advertise one s intellectual of technical accomplishments to build up a large and lucr tive pricture or mirely to just fy one a scademic standing in the eyes of colleagues and of the powers that be Unfortunately in my physicians proud of belonging to a profession that is—or should be—both leaned and literary are animated by the prejud of literary output. The universality of this belief scarcely lessens its pathos. While it is generally cepted that the only thic I or genteel way in which a doctor can advertise himself and he wares i by writing scientific papers in the med of journals or medical attricts of popular interest in the lay press the ricks of such a practice are not always ralized. Wilfred Trotters warning is pertinent. When the poison of publicity once gets into a doct is veins the is no oure medical or surgical.

—W R. BETT M own M d p 1016 De 1954

GROUP THERAPY AT AN ARMY MENTAL HYGIENE CENTER

DONALD G LINDSAY Captain MC USA

THE PROBLEM of increasing psychotherapoutic officiency in the military service is of far reaching sociologic and well as military importance. A maladjusted person who is separated from the service is in most cases permanently lost from the manpower reserve, and those salvaged not only represent manpower conserved for defense but also a stronger, healthier society. A great advantage offered by group thompy is a marked increase in psychotherapeutic officiency. A psychotherapist can confer with 80 to 100 patients a week in group thorapy in addition to his other duties. Thus the function of the military psychiatric clinic becomes oriented more toward salvage and rehabilitation than toward disposition and environmental manipulation, with its resultant problem of secondary gain.

ADVANTAGES AND DISADVANTAGES OF GROUP THE RAPY

It must not be thought that group therapy is valuable rolely as a time saving substitute for individual therapy, for it has therapeutic advantages peculiar to itself. Although in most instances it is more difficult for the therapist than individual therapy group therapy in cortain patients is valuable when combined with individual therapy because it allows two distinctly different patient-therapist relationships as well as other advantages peculiar to each method. Not the least of the advantages of group therapy is the opportunity it offers the military for nuch needed research in group dynamics.

One of the main disadvantages of doing proof therapy in a military setting is the constant change of patients. This not only reduces the time available for treatment but requires continual readjustment within the group which is particularly distributed to therapy. This situation can be partially controlled by the plan for group therapy described herein. The length of treatment there available is not so much a problem if the therapy is illerified in his therapoutic methods and goals. Another difficulty is trust of getting eight trainees together in one place as one time the best way to olve this problem is to have goed laired with the

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line officers and noncommissioned officers. In this the military social worker in the field is invaluable. If the therapist knows the company officers and noncommissioned officers personally and there is mutual respect, regulations and schedules do not seem to interfere

GROUP THERAPY IN THE MILITARY SETTING

Changing the membership of a group unquestionably slows progress even though an occasional new member is well toler ated. In an Army mental hygiene center the therapist will com monly start with a group of eight and after three weeks because of pressure from the line cadre shipment to another station or poor motivation for treatment find only four members remaining

Here the therapist must combat his own feelings of failure and first of all forget those who have not returned. They have received some teaching and even this will often simplify their management at the dispensary or in the company The natural tendence is to get discouraged and neglect those who remain however these are the better candidates for treatment. A sure way to discourage them is to place them with four new members and repeat the early phases of treatment.

A good method is to start blocks of four groups of eight members each and plan to get one long term group from this The therapy is at first directive and superficial with gradual progression to more advanced nondirective technics. After the first three to five meetings the four groups are consolidated into two therapy groups These two groups will remain from 10 to 12 weeks in a basic training center When it becomes necessary to consol idate these two groups the result is a group that is motivated for therapy and physically able to continue

PATIENTS WHO DO WELL IN GROUP THERAPY

A group of military patients especially suited for group psycho therapy is made up of soldiers who do not socialize well Common problems encountered in this group are (1) language difficulties (2) lack of formal education (3) meager cultural background, (4) withdrawn schizoid tendencies and (5) immaturity and homesick nes One or two of these patients are put in a group but are not pushed to participate and yet not ignored The group invariably rallies behind then and they gradually come to participate freely in the group discussion and increase in self-confidence which seems to carry over to their activities in larger groups They al o acquire knowledge of the dynamics behind their patterns of withdrawal. The therapist has to gradually lead the group away from over supporting these people if they are to be desensitized to criticism and taught to respond in a more open aggressive manner

The soldiers whose psychiatric illnesses are expressed through somatic complaints are a great problem at the dispensary level The dispensary medical officer does not have the time to explain their condition to them and so relieve their anxiety. Frequently he tends to aggravate their anxiety and hence their symptoms Often merely telling the patients that their symptoms are due to emotional or motivational difficulties does not suffice From their point of view, they have symptoms and have not even been exam ined These people keep returning on sick call Such soldiers can be placed in a group and helped greatly First of all, they are encouraged to talk about themselves, in fact, allowed to talk themselves out. They must also sit and listen to the other mem bers do the same thing An attempt is then made to tell them in language they can understand and as much in terms of their own experiences as possible, the cause-and-effect relationships ex isting between their symptoms and their emotional problems. From this, they are guided toward uncovering and working through their emotional difficulties The members support each other, and a therapeutically useful esprit de corps is developed In terms of their behavior within the group, an attempt is made to wean them away from expressing their conflicts through symptoms The meetings are structured so that the group itself does this In the group, a member will be able to see how another member is hiding behind his symptoms, how he resists giving them up, et cetera One member may point out how another lapses into complaining about his symptoms when the group gets close to his problem The group also becomes intolerant of symptoms demanding their repression and the members work on their underlying problems Therapy is mostly along psychobiologic lines Such group therapy. combined with the occasional intelligent use of adjunctive meas ures such as an ergot preparation in some patients with vascular headaches and exercises in those with backache, will enable many of them to remain compensated and do Army duty

If the therapist is successful in getting over the initial hurdles of his patients suspicion hostility, acting out, and attempts at manipulation and testing of himself a group of mild to moderate antisocial personalities and hostile aggressive soldiers will develop a surprising amount of group loyalty from which they will derive therapeutic benefit. Even though this group may be lined up solidly against outside influence, good group support and direction is enough to enable a number of them to adjust and toler ate the necessary demands from outside the group

Probably one of the groups most fruitful to treat is one with patients who have difficulty adjusting to the military authoritarian culture. This difficulty is usually based on a neurotic child parent relationship. These people in civilian life are able to stay compensated and are often valuable and well trained.

They break down usually in basic training when they are faced with more rigid authoritarian control combined with lack of gratification of their immature dependent needs

In treating these people as with antisocial types the therapist must be a leader He must be very adept at handling his authoritarian role and must know clearly himself how and why he con forms to this same authority. He must be able to accept and han dle hostility and the problem of secondary gain. In short, he must be able to manage the kind of ambivalence found in any child who must adjust and conform. The child however cannot run away from his parents as easily as can these patients from the therapist. The problems of manipulation of the therapit, of secondary gain and of psychotherapy in an authoritarian setting will be discussed at greater length later on

A completely nondirective approach early in the treatment of such patients is valuable. At the first meeting the therapist merely comes in sits down and says nothing. This can be al lowed to go on as long as the therapist can remain comfortable He will observe a gradually increasing anxiet, and hostility at the lack of rules and direction This can be interpreted for the group I e can then allow the group to interact freely and allow or tacitly encourage their expressions of defiance toward author ity As this flaunting of authority continues signs of anxiety in the members will develop because of lack of control and rules and signs of disrespect toward the therapist. He then has the opportunity to demonstrate these ambivalent feelings and if he does not betray anxiety his repeated interpretation of the dynam ios of the situation will be helpful. If he feels anxiety it will immediately be sensed and will increase the anxiety of the group prompting it to manipulate him In short, any group must have and will anxiously search for limits it is continually testing the limits under which it functions. This dynamic process can be used as a powerful tool in helping soldiers adjust to more authoritarianism

SELECTING PATIENTS FOR A GROUP

A group of patients with mixed problems is often more responsive to therapy than one with patients with similar personality problems diagnosis dynamics sex age et cetera. The therapist can attempt to bilance groups on a more operational basis. There should be a few talkative ones a few withdrawn ones a few sympathetic empathetic ones. No more than one very hostile or one depressed person should be included. Depressed or very hostile patients impede progress in a mixed group as do the patients who talk continually to keep down their anxiety. Certain by various degrees of motivation for therapy and ability to accent insight are very important considerations in forming a group

The effects and ramifications of sibling rivalry in each member and an estimate of how they will affect the group dynamics are important In the military situation it is important not to mix patients who have profile changes with those who do not.

Often it is helpful to have a few individual interviews before placing a patient in a group Most important, in the military, groups can be formed at random after the initial interview and then, through use of the plan for consolidation and regrouping be reformed with much saving of the therapist's time. In fact, by this method groups tend to form themselves, and from such groups the therapist can learn more about the therapeutic value of the group make-up

Before placing a man in a group it is extremely important to decide early whether or not he will require administrative disposition, because once in a group he will not be given such a disposition. The whole atmosphere is that members are expected to adjust If it becomes obvious that a member must be discharged the therapist should allow the patient to go on until the pain of outside pressure, plus lack of satisfaction from the therapy, forces him to drop out of the group then a social worker sees this patient and gets him to a fellow psychiatrist for disposition

SOME ASPECTS OF GROUP DYNAMICS

Group therapy is more difficult than individual therapy for the therapist because he feels more threatened It is something new, and he has his normal skepticism as well as doubts about his ability to do group therapy. The hostile group is quick to sense these feelings and to play them for all they are worth. Such action prompts the therapist to defend himself instead of to accept and eventually interpret the hostility. This defense encourages the group to another onslaught, and many therapists never get beyond this point. Often if the therapist must preserve his dignity, he will, from there on, be doing only that or else blocking communication by use of his authority. The aim is to move the group through interpretation and not let it bog down. Every group, like every individual, resists insight, and hostility and resistance are more difficult to manage in a group. Although silence in group therapy is more distressing for the therapist than it is in individual therapy, strong positive transference anxieties and especially sexual anxieties are easier to control.

Group therapy is harder than individual therapy for the therapist in other ways. The therapist's dynamics seem to be more obvious as indeed do the patient's It is easy for the therapist to be fatherly, familiar and friendly with one person, it is harder to invest his libido in a group. It is more difficult for the therapist to recognize and control his own hostility, and the effects of his

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own experience with sibling rivalry Feelings of sibling rivalry in the patients are very acute and a show of favoritism can be very damaging but also therapeutic Both the therapist's and the patients reactions to this should be interpreted and the group tacitly encouraged to bring up at any time their resentment feel ings of lealousy et cetera

Handling hostility is one of the most difficult but important technics to learn if the therapist is to do successful group therapy It is best learned by being himself a patient in a group In many ways he will be a better group therapist for such an ex perience Even more than with individual therapy group inter action occurs in such a multitude of subtle ways that first-hand experience and working through of his own feelings is essential It is helpful if he can conduct several group sessions with another therapist sitting in to check and point out instances where he has headed off expressions of hostility stopped its development, or showed evidence of anxiety in the face of hostility This technic of course can be used with other aspects of group therapy 1

The therapist especially during the first few sessions is continually under every kind of pressure to be provoked and the slightest sign of a need to defend himself or of any anxiety will bring on more testing. It is the therapist's mability to accept and interpret hostility that is mainly responsible for a group so hos tile that therapy becomes impossible Improper handling of hostility also has much to do with absenteeism Hostility must be accepted and at the proper time interpreted. The ways in which hostility is expressed (and the way it is conveyed to the therapist) are often felt rather than understood or not realized until long after the meeting

There are practical methods of managing more direct hostility For example if the patient asks the therapist an embarrassing personal question such as "Doc did you ever masturbate? The therapist is in a dilemma If he says 'No he will be suspect anyway and will show evidence of not being able to accept in himself what he purports to accept in them If he says yes" he will probably be embarrassed and be weaker than the members who have not had to take a stand The therapist can say answer this but first we should have a clear understanding of why it was asked During this discussion the therapist can point out that one reason the question was asked was to convey hostility and the reasons for these masked feelings are then put up to the group invariably the discussion is taken up and carried along for some time. The question also conveys Doc do you really believe this stuff? Aren t you a bit hypocritical? Before the session ends the therapist should answer it yes or no

not, the fact that he wiggled out of answering will be brought up again, directly or indirectly. Also he will find that, after a discussion of the dynamics and dissipation of the tense feelings behind the question, no one is too interested in the answer. All are immensely interested in the fact that the therapist acted openly and in good faith, and that he calmly and freely submitted to the same self scruting that caused them anxiety.

Another similar problem that comes up again and again is con nected with dependence and with the common attitude toward medical treatment. This has many familiar variations. It may be expressed by, Here I am, Doc Now it's up to you to get me well," or I m not getting a bit better or Doc, you mean this talking is going to cure my headache?, et cetera. The feeling is either that the physician knows what to do to help and he isn t doing it, or, equally bad, that he doesn t know what he is doing Here again it is necessary to push aside the spoken words and show the group the feeling (hostility) and what is behind it (rejection of dependent needs). This handling of dependence and the gradual establishment of a therapeutic relationship wherein the patient accepts responsibility for working out his own problems is too familiar to require further elaboration.

If the group feeling is directed so that the therapist is the center of attention and each member talks to him, or through him to the others, although the group is less anxious and absenteeism is lower, the possibility that he will have difficulty with the problems of hostility later is increased and he will have difficulty getting the members to accept his interpretations. If the therapist stays on the periphery and forces the members to deal with each other (for they will instinctively try to force the therapist into the center) there is initially as much or more hostility toward him, but he is in a much better position to impart insight and work members against each other. In the military situation, with poorly motivated patients, the latter method, if used early, often produces so much anxiety that absenteeism is a problem. An early directive one is perhaps more practical

A group has movement. This means more than the constant talking of members or the fact that most of the members are enter tailed Porhaps it could best be defined as a period of freedom from resistance. There can be definite movement in periods of silence. The group (as well as the therapist) senses lack of movement and members are acute to sense when the therapist is anxiously fighting to maintain movement. The group tends to resist movement, yet is anxious when it stops Group sessions are slower to start and harder to stop than are individual sessions. The therapist may struggle to maintain movement, but he must be

particularly subtle and free from anxiety in his methods of doing this A big fear of the beginning therapist is that he will not be able to keep the group going One of the first things he must do is develop the ability to be comfortable during periods of silence and manipulate them for therapeutic benefit. Long periods of silence early in therapy may become nonproductive and filled with hostility. In the early teaching phases of group therapy under the plan discussed herein long silences are not allowed. One way to handle them is to ask. Why the stience? What does it mean? Why did it happen now? Perhaps someone will say Because we have no more to say Again the therapist asks Why?n or Why at this particular point? et cetera and usually a discussion along therapeutic lines follows in other vords the silence becomes a rallying point about which the group moves

PROBLEMS IN MILITARY GROUP THERAPY

A free flow of communication simply is not achieved in an authoritarian setting however too much has been made of the cramping effects of the military culture on psychotherapy. In civil ian life we are in many ways in similar positions toward authority Civilian psychiatric patients who confess or threaten crimes and those who make sexual advances present problems basically very similar to the soldier who will not do duty or who wants a profile change or a discharge. To handle these problems in military as in civilian practice we must know ourselves know our patients structure the treatment situation so that such interference will be at a minimum and above all interpret emotions.

Too many of us too greatly enjoy the power the military gives us In the military psychiatrist the combination of this need for power with the hostility he may feel toward the authority over him covered by a veneer of rationalization produces a psychia trist better suited for disposing of patients than for treating them Such a person has difficulty in attaining firmness and still main taining rapport. He is continually worried that things are going to get out of control Every military psychiatrist mu t decide how much authority he requires how this may be preserved, and how much may be eliminated in the interests of psychotherapy

The patients are told that just as in civilian life during the treatment time and in the confines of the room there will be no army no rank. The physician wears a white coat, but most important is his attitude. The feeling tone he conveys and produces in the patient is the crucal thing. The emphasis is on therapy and the impression is conveyed that environmental manipulation of any sort just is not done. In such a setting group interaction in military practice can be built on the basis of mutual openness trust and respect just as it is in civilian practice. It is amazing how much such a group will tolerate. The hostility divested of

some of its fearfulness to everyone, assumes a more benign char acter. The members accept hostility from each other and often even try to be helpful in face of it. Usually the whole group will rally to support the hostile one and will accept his outbursts as therapeutic abreaction. Once this atmosphere is established therapy moves rapidly

In summary, then, every member of a group is in need of rules to govern his behavior and becomes anxious if he does not know the limitations imposed on the group. He watches anxiously to see if intragroup tension is getting too high the individual intensity of these anxieties varies with each person s personality. Limitations can and should be made, but the way in which they are made markedly influences the progress of therapy. A skillfully constructed, flexible, nonprovoking boundary that changes with the group s own anxieties and need for control would seem best.

THE PROBLEM OF SECONDARY GAIN

The more the military psychiatrist can eliminate from his methods any suggestion of secondary gain, the better therapy he will do To be sure, the psychiatrist's job is neither to change the Army to fit the soldier, nor to change the soldier to fit the Army His task is to help them both to fit together, for there are aspects of both he cannot change The best way for him to manage the problem of secondary gain is simply not to allow any to his patients The patient should be given the understanding that he is there for treatment, and that the therapist has no idea but what treatment will be successful If the patient seems to require dis position or environmental manipulation, the therapist can arrange for a fellow psychiatrist to take care of such matters. Then the patient can be told that the therapist does only therapy if the patient is interested in disposition he must see another member of the staff After seeing the patient in a group the therapist is well able to decide what should be done and behind the scenes should assist the other staff member This does not prevent the patient from returning for therapy however, patients who have received profile changes are treated in separate groups

It is sometimes frightening how desperately some patients will beat their head against such a wall. Many adjust, however, continue therapy, and do good service. All this assumes accurate diagnosis faith in one's decisions good treatment, and good liaison with the line officer. As the therapist's experience in creases, he will find his need for the other psychiatrist decreases.

Early in treatment the patient may be told that military psychia trists and their patients have a special relationship. The soldier patients may freely express themselves. The psychiatrist in turn has no power to change the Army for them. Sometimes it is help ful to tell the patients that we learn always through effort and

the first step toward the patient's understanding of the causes of his trouble and can lead to an examination of deeper reasons to discussions of dependence ambivalence perhaps child parent relationships, mechanisms of defense et cetera They will also lead to ventilation and discussion of the way the patient was treated at the dispensary and of his other gnevances toward the Army and to further emotional expression

In this atmosphere of free communication with logic and feel ing flying in all directions the therapist observes what actions he can What are the relationships between the members? Why do cliques form? When and why do they change? Why do some mem bers not participate and should an effort be made at this time to draw them into the discussion?

As the group progresses perhaps after three or four sessions the therapist gradually begins to drop back—there is plenty to observe-and to follow where the patients lead The character of the meetings then tends to fall into a pattern which seems to repeat itself in each group First, there is the development of and adjustment to the group atmosphere second the testing out of intermember interclique and member therapist relations. Then out of the concurrent ventilation mutually supportive group feel ing is established Communication is freer and the members hav ing gotten to know each other more intimately develop stronger transference feelings and intragroup lovalties. The point is reach ed where the group functions in an open intimate manner where any member feels free to discuss almost anything. The other mem bers feel sure of tolerance and do not hesitate to discuss the feelings or experiences others bring out or to bring up feelings of their own that the discussion may have brought to mind In this way and with some guidance from the therapist, the group gradually explores its experiences uncovers repressed material and provides an excellent medium for corrective experience With the help of the therapist dream analysis and transference analy sis is used. The therapist then finds his role gradually changing from that of teacher of mental hygiene to that of psychobiologic psychotherapist, and finally to that of therapist along more psychoanalytic lines

REFFRENCE

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CHANGES IN THE PROTHROMBIN COMPLEX AFTER TOTAL BODY IRRADIATION

R L VERWILGHEN Second Lieutenani Medical Corps
J M PEREMANS Second Lieutenani M d cal Corps
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ACUTE irradiation of the body is the cause of disturbances in blood coagulation which are not yet entirely understood. Investigations on human beings have been possible only in Janun¹⁻³ or after accidental irradiations 4

After irradiation of animals, such as dogs, with the L D 100 a hemorrhagic tendency is evident Severe thrombopenia is one of the causes of this syndrome 5-13 Jackson 14 13 demonstrated that prothrombin consumption decreases with the number of thrombocytes Prolongation of the clotting times occurs frequently at the same time, but this is not always the case 15

Disturbances other than the diminution of the number of plate lets seem to occur in blood coagulation. Allen's hypothesis¹ that hepann would be present in the blood should be discarded³ 1¹³⁻¹⁵ but the possibility that other anticoagulants may be present cannot be excluded Jacobs and associates²⁰ described a decrease in the concentration of the serum prothrombin conversion accelerator (SPCA) (convertin) present in the serum of irradiated animals

TECHNICS

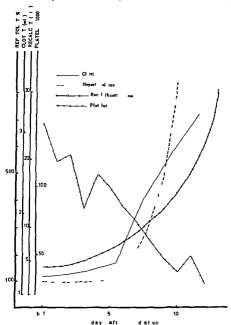
Irradiation Our dogs were irradiated over the entire body with x ray lamps of 200 kv and 15 ma. The animals were always turned over after half the dose had been given

Investigation of blood coagulation The platelet count was determined by means of Van Goidsenhoven s¹¹ technic and the clotting time by the Lee-White method The plasma recalcification time was determined as follows A volume of citrated plasma was recalcificated with an equal volume of a 1/40 molar CaCl, solution The hepann tolerance test consists in measuring clotting times of recalcified plasma to which known quantities of hoparin are added The prothrombin time following a one stage technic was done as described by Quick ²² the specific

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determination of prothrombin accelerin (Ac globulin) and convertin were performed according to the methods of Koller and



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associates and Larrieu and co workers and the fibringen con centration was determined photometrically. Antithrombin was

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determined by a one-stage" technic as follows A known quantity of thrombin was added to citrated plasma and the coagulation time was determined and compared with the one found on normal plasma. In the determination following a "two stage" technic, a known amount of thrombin was added to the defibrinated plasma and its inactivation was followed The thromboplastin generation test was done as described by Biggs and Macfarlane ²⁵

TABLE 1 The p othrombin time as measured by the Quick technic in irradiated dogs (Results are expressed in percent of normal)

	imadiated dogs (Results are expressed in persons of										
	Befor				D ys	fter stra	diation				
Dog	un drat u	6	7	8	9	10	11	12	13	14	15
1	1					Percer	ıt				
3	100		50	100	100		100	32	35	30	28
4	100	100	- 1	100		1	46	1			
5	60	1	- 1	23	< 5	ì	<5	1		1	}
6	100		į	75	50		65				
7	50		- 1	75		ļ	l	[l	
11	100	1	- 1	· '	48	i	1	1	1	i	ì
12	100		75	48	19	l	l	Į		l	l
15	75		60		}	ļ		-	.	1	ł
17	50	İ	35		38	1		i i		l	
21	60	ĺ	60	Ì	38	35	1	l	l	1	1
22	100	50		38	35	l	l	1	[l	l
23	55	35	28	1	i			1		[
24	50	l .	52	1	1	1	60	1	1	1	1
26	100	100		75	100	100				l	1
	1	1			<u> </u>	1		1	<u> </u>		

RESULTS

From observation and autopsy study of a series of dogs irra diated with 400 and 600 r, we found the classical hemorrhagic syndrome in 16 of the 17 animals We found a gradually increasing thrombopenia, a lengthening of the clotting and recalcification times, and a lengthening of the heparin tolerance time (fig. 1) It should be mentioned that in many animals the clotting time during the last days before death was greatly lengthened, and the blood was almost totally incoagulable.

The results obtained with the "one stage" prothombin time are given in table 1 A prolongation is found in a certain number of the animals but the amount of accelerin does not seem to be influenced by the irradiation

The prothrombin concentration was decreased in 10 of the 15 dogs on which this determination was made (table 2) There was a significant decrease in the amount of convertin in 13 of 15 dogs (table 3) After irradiation there exists as many investigators have already indicated an increase in the fibrinogenemia We have never found any increase in antithrombin either with a one stage or a two stage technic

TABLE 2 P thrombin c trat plasma of urr diated d g

		×	pre	dap	er	t /	mal				
					D y	ſ	µrrad:	uktı			
Dog	Bí ndua (percess)	6	7	8	9	10	11	12	13	14	15
						P					
3	100		100	100			100	53	51	70	70
4	100	100		100	1		100	1		1	1
5	100	1	1	75	52	1	37	1	1	1	1
6	100			100	100		100	l l			
7	75	1	i	100	1	1	1	1	1	1	1
11	100	1		1	64				1	ļ	1
12	70	ĺ	65	100	47	1	1		ĺ	1	1
15	100	1	100	1	Ì		}		ì	1	ì
17	70		68	100	100	i i			ļ	ļ	1
21	100	ļ	100	1	70	15	li				J
22	70	67	Į	60	55		Į		ĺ	[l
23	70		52		1				ļ	ļ	ĺ
24	68	1	40	Į	1	1	68		1		1
26	100		ì	68	100	100				1	1
		l	1	I		1			1	ĺ	1

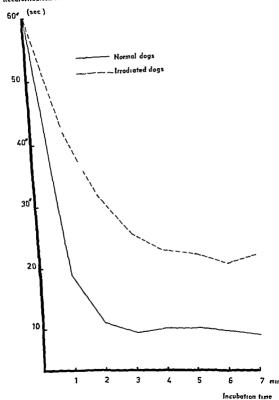
The thromboplastin generation test gave results that show a severe disturbance in the formation of the thromboplastin after irradiation (fig. 2)

Only in some of the animals was thrombopenia the cause of these disturbances and in these the addition of platelets from a noninradiated dog gave an increase in the formed thromboplastin to a normal level (fig 3)

In another group of animals a decrease in the serum factor needed for thromboplastin generation was the cause of the abnormal results obtained in the thromboplastin generation test. In those cases the addition of normal serum acting as a source of convertin and Christmas factor brings the result back to the

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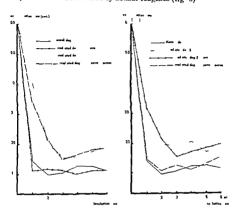




Figu e 2. Thromboplastin generation test in a series of normal and irradiate dogs about eight days after imadiation

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normal (fig 4) In some animals we found a combined lack of a compound in the serum and of platelets and a normal result in the thromboplastin generation test was obtained only when these two compounds were substituted by normal reagents (fig 5)



F gur 3. The mbople is nesses at on 1 to the a mixture f mp ment from dag 17 (we day after irradist) and no mai omp ne t. The re alts ademon t t. a lass if c ency of blo d platelet. Figs. 4. Thomboplasts in g. et o. te t with a mixture of c mponents from dag 5 (gbt day aft r irrad at on) and normal ompone to The r. Its dem notice no f ie yof c ert. n. s. f

Determination of the Christmas factor and of the anthemophilic globulin was made in the following manner. The plasma to be investigated is added to plasma containing the Christmas factor or that from a hemophilic patient, and the recalcification times of these mixtures are compared with that of the same experiments where normal plasma is used. We have thus found that the amount of Christmas factor and of anthemophilic globulin is normal in our irreductation pumple.

Plasma recalcification times of plasma mixtures Addition of normal plasma. The results of these tests are given in table 4. A small amount of normal plasma brings the results to normal values again This is an argument against the presence of an anticoagulant as a cause of the disturbance in blood clotting

TABLE 3 Convertin content in plasma of irradiated dogs expressed as percent of no mai

	percent of no mai										
				-	Day	ft r	ırradı	a tio			
Dog	Bef irradiation (p cent)	6	7	8	9	10	11	12	13	14	15
	(p cent)	Pr st									
3	100		68	100			66	48	42	66	57
4	100	70	ł	100	1	1	100	İ	1	İ	
5 6	100	Į	i .	24	< 5	l	10	i	1	l	
6	100			80	66		63		1		
7	75	1	ļ	60	1	}	1	1	ļ	1	!
11	100		1	ı	48	1	1	1	1		
12	80	1	45	70	13		ŀ	ĺ	1	1	
15	100	1	70	1	1	1	ŀ	İ			1
17	75	ĺ	48	100	65	Ì	1)	1	Ì]
21	100	1	100	}	75	18	1		1	1	1
22	100	45		43	42		ľ		1		
23	65	63	33		1	1	1		1		i
24	75	1	45	1	l	l	45	l	į į	[
26	80	55		70	100	100	1	l	1	Ì	l
	1 _						l .		1	l	

TABLE 4 Recalc ficat on time on plasma mixtures from normal and irradiated dogs

Qu	antity	Dog 17	Dog 21		
Normal dog plasma	Irradiated dog plasma	9 days after irradiation	8 days after irradiation		
0 1 0 09 0 075 0 05 0 025	0 01 0 025 0 05 0 075 0 09 0 1	1 min 4 sec 1 min 17 sec 1 min 11 sec 1 min 11 sec 1 min 14 sec 1 min 5 sec 3 min 3 sec	1 min 1 sec 1 min 9 sec 1 min 17 sec 1 min 21 sec 1 min 26 sec 1 min 47 sec 4 min		

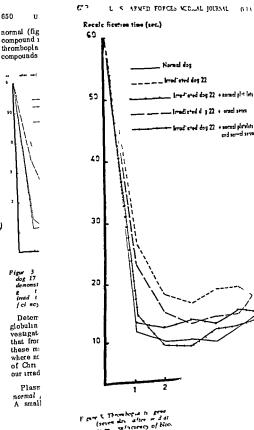


TABLE 5 Recalcification time (R. T) and bepa in tolerance time (H. T. T) of mixtures of plasma from irrad ated dogs and patient on bisbydroxycoumann

Quantity		Normal d	og plasma	Pl sma from dog 21 10 days after madiation				
Dog plasm	D cum ol plasma	R T	нтт	R. T	нтт			
0 075 0 05 0 025	0 025 0 05 0 075 0 1	1 min 6 sec 1 min 14 c	1 mm 56 sec 2 mm 10 ec 2 m n 19 c. 5 mm 51 sec	3 min. 8 sec. 3 min. 23 sec.	5 m in 7 s c 5 m in 16 sec			

Mixtures of plasma from irradiated dogs with bishydroxycouma rin (dicumarol) plasma Plasma from irradiated dogs cannot shorten the recalcification time of dicumarol plasma as does plasma from normal dogs (table 5) This can be explained if the same factor is lowered in the two samples of plasma

TABLE 6 Recalc fication time (R T) and begann tolerance time (H T T) of m xtures of plasma from normal and irrad ated dogs unth plasma adsorbed on barum sulfate

Brum sulf t	Normal I	Оод	D g 21 10 days after d no		
plasm	RT	нтт	RT	нтт	
0 05 0 075 0 09 0 1	I min 19 c. I min 10 s c. 2 min. 20 c. >30 m n.	2 m; 5 c 2 m; 25 sec 5 m; 42 > 30 m		>30 min. >30 min >30 min >30 m n	
	sulf t plasm 0 05 0 075 0 09	Sulf t plasm R T	sulf t plasm R T H T T 0 05 1 min 19 c. 2 min 5 c 0075 l min 10 s c. 2 min 25 sec 0 09 2 min 20 c. 5 m 42 5 m 42	B num Normal Dog 10 days after	

Viztures with plasma adsorbed on barium sulfate This expenence (table 6) gives the same results as when dicumarol plasma is used.

Mixtures with serum Addition of a small amount of normal serum greatly shortens the recalcification time of irradiated plasma but serum adsorbed with 3aSO4 causes no shortening of these recalcification times (table 7)

The influence of vitamin F_1 was examined This agent can increase the reduced amount of prothrombin and convertin from intachated dogs. In our studies the quantity of vitamin F needed

was very high and the increase in prothrombin and convertin was rather slow Further investigation is needed on this subject

TABLE 7 R alc f t tme fmxtur of plasma from trad t dd e wath normal um and erum adsorb do barrum lfat

Pl mdg21		Relf tion tm						
10 dy fter dat n	Serum	N mai rum	Barım ulf te s um					
0 075	0 025	1 mm. 44	5 m 28					
0 05	0 05	1 m.i 45	6 ms 35 c					
0 025	0 075	2 min 21 c	10 mi					
0 01	0 09	2 m. 20	· ~					
	01	∞	∾					

DISCUSSION

A senies of dogs was irradiated with x ray with doses of 400 and 600 r No significant difference was found between these two groups of animals and the results were given together All the dogs who lived more than a week after the irradiation (16 of the 17 animals) showed clearly a hemorrhagic syndrome

In this study we tried to investigate the disturbances occurring in the blood coagulation of these animals. A severe thrombopenia appeared It seems probable however that other factors play their part in the pathogenesis of this syndrome In other cases of severe thrombonenia the clotting times are not greatly increased. but after imadiation the coagulation of blood is very much delayed and we may find blood which does not even dot at all

A significant decrease of prothrombin and convertin concentrations in the plasma was found in a significant number of the if radiated animals

Hypoconvertinemia occurring in 13 dogs out of the 15 can be very severe This insufficiency of convertin can also be deduced from the results obtained in the thromboplastin generation test. We found in some of the dogs a lack in thromboplastin formation which can only be compensated if serum from a normal dog is added to the mixture in which the thrombonlastin formation is in vestigated In this test the serum acts as a source of the Christmas factor and of the convertin By specific determination of this factor we were able to demonstrate that the Christmas factor was present in a normal amount. The factor from the serum that seems to be present in an insufficient concentration is probably convertin

This lack of convertin can be confirmed by the results obtained in recalcification times on mixtures of plasmas

Addition of plasma that contains convertin brings the recalcification time of a plasma sample from an irradiated dog again to normal, but addition of a convertin poor plasma (plasma adsorbed with BaSO₄ or taken from a patient during bishydroxycoumarin therapy) cannot attain the same result Normal serum, containing convertin, also brings these recalcification times back to normal, but after adsorption with BaSO₄ this was no longer the case

The possibility of the presence of anticoagulants was investigated. The results with two technics of determination of the antithrombin were normal. This seems to exclude the possibility that heparin is present. Neither with the thromboplastin generation test nor with the determination of recalcification times on plasma mixtures did we find any evidence for the presence of anticoagulants.

We finally investigated the action of vitamin K, in bringing the amounts of prothrombin and convertin again to normal This vitamin could produce an increase in these amounts, but further investigation is also needed here

SUMMARY AND CONCLUSIONS

In the senes of dogs irradiated with 400 and 600 r we found severe thrombopenia. Furthermore, there was a severe lack of convertin, and to a lesser extent, lack of prothrombin in the majority of dogs. It was not possible to find facts in favor of the hypothesis that and coagulants are present.

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COARCTATION OF THE AORTA

Report of Four Cases

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MPROVEMENT in surgical technic, better anesthesia, and the establishment of blood vessel banks have increased the responsibility of the internist, pediatrician, and general practitioner in the early diagnosis of coarctation of the aorta Although the surgical contraindications are being progressively narrowed, the most suitable candidate continues to be the patient in the second or third decade of life. The complication of atheroscierosis in men beyond the age of 30 years materially affects the prognosis. Because this anomaly is more common in men, an early diagnosis is extremely important.

The syndrome of coarctation of the aorta and the history of the development of definitive surgical treatment have been covered by many articles and textbooks. The interested reader is referred to recent publications of White¹ and Gross ²

Military medicine affords a unique opportunity for early dis covery of this lesion and cases are being diagnosed in increas ing numbers in military hospitals 'Frequently, the only general physical examinations in early adult life for many young men are those associated with enlistment or induction into the military service

CASE REPORTS

In a six month period at this hospital, four cases of coarc tation of the aorta were recognized in all four instances the opportunity for discovery of this lesion had been present at an earlier date, but had been missed because of an inadequate physical examination. The first patient was hospitalized with a working diagnosis of acute meningo-encephalitis and for many days the hypertension was attributed to damage of the central nervous system. The second patient was a female dependent who was initially examined during the third trimester of a pregnancy. She was originally considered to be pre-eclamptic, and the diagnosis was made in the postpartum period when the hypertension was

not alleviated The third patient was an infantryman who had served two years with the Army in Korea and in whom the diag nosis was established during the physical examination incident to his release to inactive duty. The fourth patient was a 15 year old boy who had spent his entire life under the observation of physicians, including a prolonged period of hospitalization in an institution for convalescent care of rheumatic children with out the correct diagnosis being suspected

Case 1 A 17 year old man was admitted to this hospital as an emergency case. He had been receiving treatment for acute pharynguis and was under medicial observation when a generalized convulsion occurred. Upon initial examination the patient was semicom tose. The eyes deviated to the upper right quadrant A blowing grade II systolic car diac murnur was heard along the left sternal border and the blood pressure was 180/104 mm. Hg. The superficial reflexes were absent and bliaterial ankie clonus was observed. The deep reflexes and toe steps were normal and nuchal rightly was minure.

A lumbar puncture on admission revealed clear colorless fluid under increased pressure. The protein was 28 mg per 100 cc. There were one polymorphonuclear cell and 10 red blood cell. Per cu. mm. Bacterial culture was negative. The lumbar puncture was repeated the following day with similar findings including a spinal fluid sugar of 60 mg. per 100 cc. On admission the white cell count in the peripheral blood was 7000 per 100 cc. hemoglobin 15 grams per 100 cc.

Nuchal rigid ty incre sed during the initial 48 hours and restlessness continued. The level of consciousness gr dually improved and coherent responses were obtained on the second hospital day. Serial blood pressures were consistently elevated and this was interpreted a nesult of hypothalamic involvement. The patient gradually improved and was ambulatory and asymptomatic 10 days after admission. The neurologic findings were completely negative. During this period seri. I boratory determing tions of blood of spinal fluid were negative.

While the p tient was being ex mined in the convolescent period the abnormal vascular findings were first noted. The femoral popliteal and dorsalis p dis pul ations were absent bilaterally. Bounding pul sations in the tadial and brachial afterie were noted. The blood pressure in the uper extremities was 160/115 mm. High in the lower extremities it was unobt inable. The intercostal afteries were estly palpable. The previously described systolic murmur in the front part of the chest was well heard in the back along the pinous processes of the upper dorsal vertebrae where it wheard as a grade III systolic bruit. The past history now revealed that the patient hid had cramping leg pain when ply jung high school football.

Oscillometric determinations revealed almost total absence of pul sation in the lower extremities and high values for the upper limbs

The ballistocardiogram taken preoperatively revealed a total absence of the K stroke and was considered characteristic of aortic coarctation

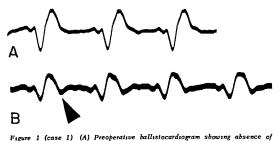


Figure 1 (case 1) (A) Preoperative eatistocaratogram showing absence of K wave (B) Trangular arrow points out the K wave in ballistocardiogram made 10 months postoperatively

(fig. 1A) A roentgenogram of the chest revealed the left ventricular shadow to be rounded and the aortic knob small with notching of sever al rib margins (fig. 2) The electrocardiogram revealed left ventricular enlargement and the electroencephalographic findings were within normal limits

At operation an area of stricture of the aorta just distal to the subclavian artery and extending about five millimeters was found. The intercostal and thoracic arteries were large and thin walled. The ductus arteriosus was found to have a pin point lumen and was ligated and divided. The area of aortic constriction was mobilized excised and an end to-end anastomosis effected. An adequate lumen exceeding 1.5 cm in diameter resulted. With removal of the clamps, the aorta pulsated normally distal to the suture line.

The immediate postoperative course was uneventful. The blood pressure in the arm was 150/100 mm Hg and in the leg 150/95 mm Hg Oscillometric determinations showed a return to the normal range. Four eight and 10 months later he was examined. At those times he was doing well and his exertional tolerance was excellent Examination at four months revealed the blood pressure to be 132/90 mm Hg in the arm and 140/95 mm Hg in the leg. The heart was not enlarged and no murmur was heard anteriorly. A faint systolic murmur was audible along the upper dorsal spine. The feet were warm and prespired nor milly Pulsations in the lower extremities were normal. A ballistocardiogram taken 10 months following operation demonstrated a definite k, wave (fig. 1B).



F gu 2 (a 1) Roe tg gr m show g nd g f the left v t la borde w that m lt ort k b nd t h g f v al b mag

Case 2 This 24 ye rold woman was first examined during the eighth month of pregnancy At that time foutine examination revealed hyper tension and she was hospitalized. The pregnancy had been unevenful with the exception of occasional fromal head ches as ociated with blurr ng of vi ion. The past h tory revealed that the patient was told she had leakage of the heart early in her childhood although her activity had never been re tricted Until the present ex mination she had not known of an elevated blood pressure. Physical examination revealed an enlarged heart. A har h grade IV systolic murmur was audible over the entire precordium in dwa loudest at the left sternal border in the fifth int roostal space. There was no thrill and the pul mon ry second s und was accentuated. A har h systolic bruit was audible in the caroud vessels. The bl od pre sure in the arm was 180/92 mm Hg. Press ure in the lower extremities was not taken.

The patient was considered to be pre eclamptic ind was tre ted with bed rest in gnesium ulf te ind sedation Four days after admission the membranes sport neously ruptured ind a double footling breech deliver; was performed Two cords were found coming from one pla centa with the second cord leading to a lithopedion. The normal child was a male infant needing no resuscritation. The postpartum period was uneventful except for a continued elevation of blood pressure. Further examination revealed that the femoral popliteal and anterior tibial pulsations were markedly diminished. The blood pressure in the lower

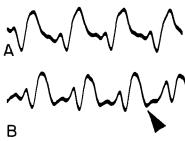


Figure 3 (case 2) (A) Preoperative ballistocardiogram showing absence of K uave (B) Triangula arrow points out the K wave in ballistocard ogram made 17 days postope atively

limbs was 110/88 mm Hg Increased intercostal collateral circulation was noted and a systolic bruit was audible over the upper dorsal spine. A ballistocardiogram was considered diagnostic of aortic coarctation and showed a total absence of a k wave (fig. 3A). A roemtgenogram of the chest (fig. 4) revealed notching of multiple ribs and a small aortic knob. The electrocardiogram showed no abnormalities.

The patient was operated on four months later Resection of the fourth left rib exposed an adult type of coarctation of the aorta. The intercostal vessels were markedly dilated The ductus arteriosus was patent and was doubly ligated and divided. The aorta was mobilized and the area of constriction resected. Following re-establishment of the aortic channel normal pulsation distal to the suture line was observed.

The patient recovered strength rapidly When examined four months after operation her exertional tolerance was excellent. She was five months pregnant indicating that she had been about one month pregnant at the time of operation. The blood pressure in the arm was 160/80 mm. Hg and in the leg. 160/100 mm. Hg. The heart was not enlarged and on auscultation a grade III systolic murmur was audible over the precordium. The bruit over the dorsal spine had become much softer

in intensity A small k wave was observed in the postoperative bal listocardiogram (fig 3B)

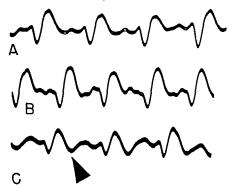
At term she had a normal delivery. The postpartum course was un eventful and at discharge the blood pressure in the upper extremities was 140/68 mm. Hg



Fgu 4 (a 2) Roetge gam bwg dg fthelfi i lar brd wthadm i aort k bnd i bgof l bmags

Ca e 3 Thi 23 ye r old man was undergo ng his physical examination for epar tion from the timed services when an elevated blood pressure was observed. In the four years antecedent to admission he had been examined on four occasions including two examinations incident to military service. All had been considered normal. His exertional tolerance was excellent and he had served a full tour of duty with the infantry in korea.

The blood pressure in the arm was 180/110 mm. Hg and in the leg 95/80 mm. Hg. The radial arterial pulsation was bounding and con trasted to the pulsations of the dorsalis pedis and anterior tibial ar teries in which the pulsation was barely discernible. The heart was not enlarged and the apical thrust not increased. The first heart sound was reduplicated and the aortic second sound was of normal intensity. No murmur was audible anteriorly however a harsh grade. It systolic murmur was present over the upper three dorsal vertebrae. Pulsations in the intercostal arteries were prominent.



Figu e 5 (case 3) (A) Preope ative ballistocardiogram showing absence of h wave (B) Ballistoca d ogram made 21 days postoperat vely (C) Triangular arrow points out the h wave n ballistocardiogram made eight months postoperati ely

The ballistocardiogram revealed no significant k wave and was considered to be indicative of aortic coarctation (fig. 5A). A roent genogram of the chest (fig. 6) showed rounding of the comour of the left ventricle a small aortic knob and definite notching of several rib margins. Oscillometric studies revealed markedly decreased pul sations in both lower extremities. The electrocardiogram revealed evidence of left ventricular enlargement.

After resection of the fifth rib a constriction of the aorta was found at the site of the ductus arteriosus and extending cephalad several millimeters. There was no pulsation of the dilated poststenotic aorta. The obliterated ductus arteriosus was ligated and divided and the constricted area removed. Following an end to-end anastomosis pul sations were palpable throughout the visible aorta.

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The immediate postoperative course was complicated by a temporary paralysis of the left vocal cord but was otherwise uneventful Eight months after operation the patient appeared normal and was entirely



Fgu 6 (ca 3) R tg grm boug dg f th l ft t borde w thad m t e ort k bad t b g f l b mag

asymptomatic The blood pressure in the arm was 135/85 mm. Hg and in the leg 140/100 mm. Hg. The heatt wa not enla ged and no murmurs were audible e ther anteriorly or ov r th. back. The electrocardiogram was normal and ballistocardiograms taken t 21 d ys (fig 5D) and eight months (fig 5C) follow ng operation reve led a def nite K wave

Case 4 This 15 y ar old youth wa init ally admitted with a dig

The history indicated that after a tonsillectomy at the age of four years the family was told that the patient had an abnormal heart. Short ly thereafter he was placed in a convalescent home for rheumatic children where he remained for two years. The blood pressure in the arm

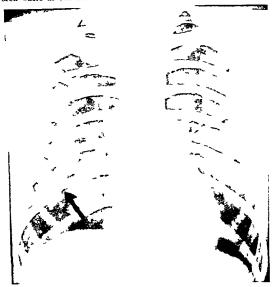


Figure 7 (case 4) Roenigenogram shot ng a small aort c knob and notching of bria gins

was 170/115 mm Hg and in the leg unobtainable. The pulse was 96 and the temperature was 99.6° F. The heart was enlarged to the left and the aprical thrust was accentuated and heaving. A systolic thrill was palpable at the apex. A harsh grade III systolic murmur was heard all over the precordium and was best heard in the third left intercostal space. A middiastolic rumble was audible at the apex. The pulmonary second sound was accentuated.

The patient was placed on bed rest and several blood cultures were taken. All proved to be negative. The temperature promptly returned

to normal and was not again elevated. He was given no medication A roentgenogram of the chest (fig 7) revealed some left ventricular enlargement notching of multiple t b margins and a small aortic knob A ballistocardiogram (fig 8) taken preoperatively failed to show a significant k wave and was considered to be compatible with aortic coarctation Oscillometric studies revealed marked diminution of pul carrons in the lower extremities. The electrocardiogram revealed left ventricular enlargement



p at ve b llist ca d g am bow

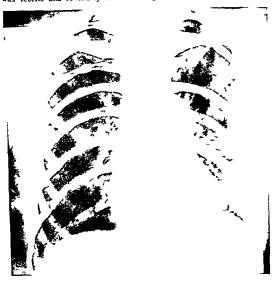
At operation the left fifth r b was resected extraperitoneally. The intercostal atteries were noted to be dilated and tortuous A m rked constriction of the aorta at the level of the ductus afterio us with slight po tstenotic dilatation was exposed Markedly decrea ed pul s rions were present in the dist I aort c segment. The ductus art riosus was ligated and divided following which the stenotic portion of the aorta was excised (fig 9) and the ends approximated





4) St noti port o f the d at p ti (phot g ph

The immedi te po toperat ve period was uneventful A roentgenogr m taken two weeks aft r operation revealed the usual degree of pleural reaction (fig 10) The patient gained weight and was discharged to his home. One month after final discharge he returned to the hospital complaining of poor appetite aching of his legs and weight loss. He was febrile and obviously had lost weight. The blood pressure in the



F gure 10 (case 4) Roentgenogram taken two weeks after operation evealing the usual degree of plewal reaction.

arm was 140/118 mm. Hg and in the leg. 112/70 mm. Hg. Examination of the heart revealed clinical findings similar to those in the pre-operative period.

The patient developed clinical evidence of subacute bacterial endar territs and responded poorly to massive doses of available antibiotics. In spite of repeated blood cultures both prior to and following chemotherapy all were reported negative. The infection was controlled on 2 grams (12 000 000 units) of penicillin and 2 grams of streptomycin daily until a dissecting anewysm developed at the area of the suture line (fig. 11).

The patient died e ght months following his initial operation



Fg 11 (4) Roe tg gr m eal g the large a ury mal d lat t uh h prot d t be d t g ne y m t the tur l

DISCUSSION

Surgical Technic The operations performed on these four patients were essentially similar (All operations were performed by Dr William E. Adams of the University of Chicago consult ant thoracic surgeon at this hospital.) All the patients presented the adult type of coarctation. In each one rib—usually the fifth sometimes the fourth—was resected from the costal cartilage and the transverse process. The lesson was identified and the constricted portion of the acrts freed for 15 cm on each side of the coarctation. The ductus arteriosus was doubly ligated and severed as were the intercostal arteries that leave the aorta in this area. Potts clamps were applied on each side and the constricted portion removed. An end to-end anastomosis was made in two layers joining intima to intima. The first layer con

sisted of three continuous mattress sutures, each going one third of the way around the vessel. The second layer consisted of three continuous running sutures (No 00000 oiled silk) applied in the same way. The lower clamp was released first to determine if there were any leaks, then the upper clamp was removed

The ribs were brought together and the muscles approximated by cotton sutures A No 12 to 14 French catheter was placed in a dependent portion so that six to 10 cm of negative pressure of water could be used The catheter was removed on the second or third day, and the patient allowed out of bed Sutures were removed on the seventh or eighth day

Diagnosis Prior to the advent of definitive vascular surgery the improvement in the diagnosis of coarctation of the acrta was of academic interest only The outlook for these patients was radically changed by the introduction of these surgical technics, and coarctation of the acrta now may be listed among the few forms of hypertension and of congenital heart disease that are potentially curable Following successful resection of a narrowed acrtic segment, the majority of the usual causes of death in such patients—1 e rupture of the acrta, cardiac failure, cerebral hemorrhage, or thrombosis—are made unlikely 2 3 Bacterial endarterities and cardiac insufficiency secondary to associated congenital cardiac lessons are potential complications little altered by operation

The diagnosis still depends upon adequate physical examina tion Refinements in diagnostic technic such as ballistocardi ography, angiocardiography, oscillemetry, et cetera, serve only to delineate the degree of acrtic obstruction Occasionally the alert roentgenologist will note rib notching and a small acrtic knob, and direct attention to the correct diagnosis

Careful examination of the peripheral vascular system is the rule in elderly patients because of the stress placed on vascular changes in diabetes mellitus and arteriosclerosis Similarly, the pediatrician has made such an examination a routine part of the postnatal evaluation of each newborn infant it is our purpose to stress such care in examination of the young adult of military ago. The clinical picture can be variable, as illustrated by the cases presented above, but a common denominator was decreased arterial pressure in the lower extremities. Palpation of the peripheral arterial system in all patients must be the rule if the condition is to be recognized.

SUMMARY

In presenting the histories of four patients with coarctation of the aorta, the variability of the clinical findings is stressed

The abnormal physical and laboratory findings leading to the original diagnoses in three of these patients were ameliocated by surgical treatment one patient died of subacute bacterial endarteritis and dissecting aneurysm eight months after resection

Adequate physical examination of the peripheral vascular system is essential to the diagnosis of this condition

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THE SCIENTIST AS A CITIZEN

W are indeed fortunate that wh tever may be revealed in the feld of med cine will be free for the use of all mankind regardless of political alfiliations religious convictions or a tion I boundatic Medicine does not ho rd its achievements. No true phys cian has ever p tented a med cal discovery. No one has ever denied its u e by friend of enemy only armed conflict between nations with differing political beliefs haever imposed restraints upon the results of med cal investig tion. Ever then the individu Is who waged war who were enemes only by cedent ministered to the sick and wounded whether they were friend or

In countries outside the iron curtain eve where varying degres of government contr I hover over medical pactice there are few restir int upon the individual physici n who seeks truth wherever he may find it and gives freely of h. labors to mankind. The only assurance we can have that this privilege to serve will continue is an enlightened cit zenry who understands the principl s of individual liberty and creative ness.

Because of the ntimat contact with the ills of men physician have gained an envisble po it on of respect and confidence arrong men. This trust obligates them to become disciples of the philosophy of i d vid al freedom in order that patients do not become apathetic to the cause of the miracles of mod in medicine.

EVALUATION OF PSYCHIATRIC SCREENING OF ENLISTED WAVES

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CHARLES W SOCARIDES Lieutenant (MC) USNR

THE WAVE Recruit Neuropsychiatric Unit, described in a previous report, was established in November 1951 to conduct psychiatric screening as well as to supervise the mental hygiene and investigate the emotional problems of women recruits undergoing military training Now, some three years later, it seems advisable to evaluate its effectiveness Separate from the U S Naval Hospital, the unit was designed to deal only with those persons who exhibited character and behavior disorders such as pathologic personalities and im maturity reactions, and those who were unable to respond favor ably to military duties Patients with more serious emotional difficulties or with psychotic disorders were transferred to the naval hospital for medical discharge. There appeared to be a necessity for the evaluation of WAVE recruits away from their companies in a special evaluation unit In addition, it was deemed necessary that the psychiatric standards previously set up for screening men be applied to women also The present "Psychiatric Unit Operational Procedure Manual" reflects this and makes a provision for an observation ward for WAVE re crints

In 1953 in summarizing the advantages of the Unit, I pointed out that through the Unit's services "the transition between military life and return to civil life is softened to some degree, especially in Waves with a sense of failure, guilt, or shame at being found unsuitable for further military service. Severely, ill recruits with suicidal tendencies, severe depressive reactions, or schizophrenic attacks are detected and hospitalized During the period of evaluation and observation on the ward, emotional difficulties can be explored and, in some cases, brief psychotherapy may be effective in returning a recruit to duty."

The emphasis was on early detection and, therefore, possible prevention of serious emotional disturbances. Prompt relief from the burden of military duty was deemed to have definite therapeutic value to this end. As the discharge was for "unsuit ability" under honorable conditions, it was important that only

those considered able to return home safely be included Those suffering from major neuroses or psychotic reactions were hos pitalized

NEED FOR OBSERVATION PERIOD

As the program progressed it soon became evident that every patient admitted was an unknown quantity and that an adequate period of evaluation for purposes of proper disposition and to fulfill medical responsibility was of the utmost importance. It also became apparent that in the best interest of the recruit s health and wolfare she should be subjected to a period of close scrutiny and observation. The benefits to the Navy appear to be substantial of 315 recruits admitted to the Unit during 1953 57 (18 1 percent) were returned to duty after brief psychotherapy while 25 (7 9 percent) found to be suffering from severe clinical neuroses or psychoses were hospitalized.

We have derived a number of secondary benefits over the past two years. One is the increasing awareness of the company commanders and the officers of the WAVE Recruit Training Command of the mental hygiene facilities that are at their disposal. The emotionally maladjusted the problem children and the potential offenders against military law are referred to the WAVE Recruit. Neuropsychiatric Unit for study and recommendations as to disposition. The psychiatric unit therefore becomes closely integrated with the WAVE recruit training program. It appears that WAVE recruit training is becoming better able to remove from training those persons who find military service an intolerable motional burden those who become chronic disciplinary offenders the so-called psychosomatic cases the accident prome and others with evidence of emotional instability. It may be stated that disciplinary offenders may be best managed by anticipating them that is by studying recruits psychiatrically and determining if they are amenable to change. In this function the psychiatric unit is careful not to assume a disciplinary offenders and determining if they are amenable to change. In this function the psychiatric unit is careful not to assume a disciplinary tole Deep-seated behavior disorders do not respond to short-term therapy and discharge on grounds of unsuitability may be advisable.

RESULTS OF OBSERVATION

About half of all incoming WAVE recruits screened on the examining line in 1959 1933 (table 1) were placed on trial duty pending further interviews and close observation of performance In 1952 from this suspect" group 287 (6.5 percent of all recruits screened) were admitted to the Unit for more detailed evaluation. This eventuated in discharge from the Navy by the Aptitude Board of 218 (4.9 percent) return to duty of 37 (0.8 percent) and transfer to a naval hospital of 18 (0.4 percent). In

1953, 315 (11 0 percent of all recruits screened) were admitted, 239 (8 4 percent) were discharged, 57 (2 0 percent) were returned to duty, and 25 (0 9 percent) were hospitalized

The increase in the rates of admission and of discharge, it is believed is due partly to a clearer definition of the criteria for unsuitability and partly to increased awareness throughout the WAVE recruit training command of the facilities available for the detection of unsuitability

on examining line									
	15)52	15	953					
	Number	Percent	Number	Percent					
Total examined	4 408	100	2 855	100					

TABLE 1 Disposit on made of recruits screened on examining line

All recruits who were discharged had demonstrated sustained poor performance in training This was a result of their having developed into certain personality types that could not adjust satisfactorily to military life At times discharge was recommended despite motivation to continue in the WAVES, because the recruit was unable to fill a Navy billet with a reasonable chance of success. This was a move in decreasing future neuropsychiatric casualty rates in its wider sense, the term neuropsychiatric casualty includes patients with psychosomatic symptoms as well as chronic disciplinary offenders, sich bay addicts, and actual psychiatric patients. These persons offer little of a constructive nature to the functioning and efficiency of the WAVES. This latter point is adequately summarized in the following "They contribute nothing through their own efforts, distract and hinder their shipmates, and lower the effective combat potential of the service."

The alternative to removal of "unsuitable" recruits who view discharge from the service as a further failure is to retain them in the service, hoping that the \au\v will be a therapeutic experience flunt and associates offered scientifically acceptable validation for naval screening as practiced during World War II. The prediction was made that the more men who were eliminated from each recruit sample through neuropsychiatric screening, the less would be the subsequent neuropsychiatric attrition during service. The results verified the hypothesis and confurred

the basic validity of the Naval Selection Program. In a further article by Hunt and associates the question of the borderline case was evaluated A study was made of 537 such borderline recruits each of whom served successfully" for three years with subsequent honorable discharge Nevertheless a careful study of the medical and service records of these borderline men" showed from four to seven times as much hospitalization and from two to six times as many major disciplinary infractions during their service as did a normal control group. In these persons a most careful clinical evaluation is necessary for proper disposition and possible salvage.

CAUSES OF PSYCHIATRIC BREAKDOWN

While Navy life as a therapeutic experience cannot be ruled out life experiences themselves being known as curative factors even in some clinical neuroses it also is clear that people be come ill not only because of burdens placed on them by others but because of those they place on themselves for whatever conscious or unconscious reasons Whenever poor performance training or maladaptive behavior reveals that the balance of adaptation is tottering termination of service is in the best interest of the recruit Military life even with some of its emotional compensations (security through obedience depend ence on authority figures et cetera) may be compared to a rather rigidly defined system of possible responses to the frustration of inner needs and desires both of the normal or neurotic variety As one recruit put it. What upsets me the most about it is that in college periodically I would stay in bed for days with my daydreams, and then suddenly all my problems would disappear and I would be all right If we could only do that here I would be fine " In the elastic environment of civilian life such actions are possible and by these escape measures a person s emotional equilibrium may be maintained for years. In addition patholog ic personality types as products of prolonged development are not easily subject to change and do not demonstrate the flexibility of some neurotic or even transiently psychotic pa tients, who with brief psychotherapy could possibly fulfill their duties a great part of the time

It is perhaps worth while to comment on the clinical picture of the diagnosis of inadequate personality which is the second most frequent diagnosis making for discharge on grounds of un suitability for WAVE recruits (18 percent of discharges in 1959 30 percent in 1953) Persons with inadequate personality are described as characterized by inadequate response to intellectual, emotional social and physical demands Thos are neither physically nor mentality grossly deficient on exami

nation, but they do show inadaptability, ineptness, poor judg ment, and social incompatibility. In our experience with and study of these persons, they appear on clinical examination to be in the chronic inhibitory phase of early neurosis production. In the development of neuroses the early onslaught of fear and guilt leads to a state of inhibition, either in specific areas of functioning or in all areas of behavior (social, sexual competitive, group membership, et cetera). This paralysis through fear is a neurotic maladaptation of instinctive "freezing," a phenomenon basic to all organisms as a passive defense against danger. If continued it may be called a chronic inhibitory state, and results in a lack of knowledge and skill in the manipulation of tasks, together with an accompanying dearth of affective responses to new tasks and past failures. This appears to be one explanation of the symptom picture of the so-called "inadequate personality."

EFFECTIVENESS OF THE PROGRAM

In order to assess the effectiveness of the WAVE Recruit Psychiatric Screening Program a follow up study was made of all those Waves who had been "cleared" by this facility, were allowed to graduate with their companies, and had assumed their duties in various billets in the Navy Beginning in November 1951 all enlisted female naval personnel underwent recruit training at this naval center so that this sample includes all incoming enlisted female naval personnel The first 18 months of operation of the WAVF Neuropsychiatric Unit were chosen for the study and the psychiatric casualty rate was compiled from 1 January 1952 to 31 December 1953. This period of time allowed each graduated recruit to serve for from six months to two years on actual duty in a Navy job

An examination of the data reveals the following

1 During the period 1 January 1952 to 30 June 1953 a total of 5 880 WAVE recruits were acroened psychiatrically by the neuropsychiatric unit Of those, 350 (60 percent) were discharged under honorable conditions before the completion of recruit training, by the aptitude board because of unsuitability for military service. An additional 37 (0.6 percent) were hospitalized, upon the recommondation of this Unit and the general modical dispensary, for major neuroses and psychoses. Those cleared for duty by the psychiatric department minimared 5 ept (93 is percent) of all incoming WAVI recruits. This includes those cleared on initial accoming, those places on well of and those later admitted to the unit for evaluation on the second control of the unit for evaluation of the second control of the unit for evaluation of the second control of the unit for evaluation of the second control of the unit for evaluation of the second control of the unit for evaluation of the second control of the unit for evaluation of the second control of the unit for evaluation of the second control of the unit for evaluation of the second control of the unit for evaluation of the second control of the unit for evaluation of the second control of the unit for evaluation of the second control of the unit for evaluation of the second control of the unit for evaluation of the second control of the unit for evaluation of the second control of the unit for evaluation of the second control of the unit for evaluation of the second control of the second control of the second control of the second control of the unit for evaluation of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the second control of the s

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TABLE 2 Prych arne iliness in naval ed sted fende personnel after completion of recruit training, during 1952 and 1953—Coatin ed

			26	Re ction	Typ	P.	Ĕ	Total
Illa s	Re ct 13	Type I re cito	N mber	Pe cent	Number	N mber Pe cent Number P c nt Number Percent	Number	Percent
Charact rand beha 1 t p tt r s	P thol g personalities	Schizo d	72	16.4	14	8 5		
	Imeniuity e cuots	Cyclotym c Cyclotym c Inadequate Antisoci I En tonal insubility Passive-drye dent Passi e sage e sive	91	553	22 1 2 2 2 2 3 2 3 3 4 3 4 3 4 3 4 3 4 3 4 3	35 8 35 8 36 8 37 8 37 8		
T tal		Agg saive			1	0	118	717
Tran lent per onality di ord rs Total	Acut situati si maladjustnent		2	1.2			2	12
Grad total							165	100 0

Follow p period six month to two year

Most patients with minor complaints who are watched care fully for the development of significant illness quickly recover without incident, Nevertheless occasionally a patient with a headache and malaise will develop atypical pneumonia or a patient with muscular discomfort will develop poliomvelitis. When one has observed the development of a disease from its earliest stages one has enhanced one's understanding of the entire morbid process.

ORGANIZATION

Unlike the other services the Navy must maintain hundreds of small mobile often isolated medical facilities. Each department is the responsibility of a medical representative only a few of whom are physicians. For the physician in such a situation a paradox is implicit, At sea he may be called on to perform tasks for which he is not qualified simply because he is the most qualified person available. On the other hand when in port he may deem it necessary to send a patient to a hospital not be cause the clinical problem exceeds his competence but because of the limitations of his sick bay.

It is important that the physician recognize this contradictory state of affairs. He must remember that he is a member of an organization primarily military secondarily medical that has the structure of a strict hierarchy Under him are the enlisted medical representatives of other ships to whom he owes assistance and consultation above him are the physicians of shore based facilities who owe him the same allegiance That this arrangement may at times violate his concept of ideal organiza tion is of no importance it is the only practicable modus oper and for naval medicine If at times he regrets the temporary loss of stimulation from professional colleagues he must realize that this is an inescapable consequence of being a member of a mobile unit. If at times he resents the loss of personal identifi cation t e being known as the medical officer rather than as Dr Jones he must appreciate that this is merely the result of playing a role in which there are frequent changes in cast.

From time to time the physician meets tacit expression of the all too-human conclusion what is free must not be worth much" and the therapeutic value of a fee becomes patent, it is distasteful to coddle (as one must) some patients to care for them in spite of themselves it is unpleasant to teach potential patients to expect such procedure and to disavow any responsibility for their own health But just as shipboard life is social so is shipboard medicine socialized it cannot be otherwise. And if the doctor attempts to force his duties into the ways of private practice he not only impairs his efficiency.

but creates unnecessary difficulties Whatever the physician's conclusions about this type of medicine, they shall represent personal experience rather than a simple parroting of the phrases of self proclaimed experts

What diseases the medical officer elects to treat aboard ship will depend on his training, the training of the men in his de partment, the facilities of his sick bay, and the location of his ship He will discover his decisions constantly changing Look ing back with more experienced judgment, he will find that some patients were sent to a hospital unnecessarily, while other pa tients had been treated aboard ship with unjustifiable risk Early in his career he will observe the need to treat ailments in the sick bay that in civilian practice he would treat at home This is readily understandable when one considers that the enlisted man's private living space may consist of a small locker and a bunk near the overhead Furthermore, even the simplest ad nuncts to home treatment-thermometer, basin for soaks, et cetera—are not in his possession but must be obtained from or used in the sick bay The policy of treatment of a minor ill ness in the sick bay is reinforced by the increase in danger of contagion as a result of the crowded condition of living quarters

Shipboard medicine offers varying opportunities for the practice of one's specialty. At one extreme the obstetrician must content himself with activities outside his chosen specialty, at the opposite end of the spectrum the physician interested in en vironmental medicine encounters an unexcelled field in which to use his talents. To the recent graduate whose experience has been limited to large hospitals, duty as ship's doctor can be enlightening. He may discover that specialty X in the super vised setting of a medical center where cases are highly selections quite different from specialty X practiced alone aboard ship at the "grass roots" level of medicine. Whatever their special interests, there are few physicians who cannot profit from the challenges that are presented daily

ADMINISTRATION

The administrative duties of the physician are many, for he has the responsibilities of a naval officer in general and of a department head in particular in addition to those of a medical man. The conferences he attends and the directives he reads may seem tadious and oven superfluous until experience demon strates, perhaps harshly, that the business of every department is his business too. If the engineering department cannot properly distill water, if the supply department cannot properly preserve meat, the physician is quickly affected. If an open hatch is left unguarded, if paint is improperly stored, a medical disaster may occur. Each department on the ship is dependent upon

every other an appreciation of which should increase one s determination if not one s relish in the discharge of administra tive duties

Medical matters blend imperceptibly with administrative matters, and it is in this area that the clinician may find himself seemingly at cross purposes with lay authority. When such a situation arises, however it is generally more apparent than real and has its origin in the ignorance of one or both parties. For a variety of reasons one may be disinclined to explain one s decisions but it is important to remember that the most obvious medical exigency is often obscure to the layman concerned Viewed in the light of mutual advantage there are few conflicts that cannot be resolved. The needs of the physician are rarely if ever contrary to the needs of the ship

Even paper work—some of it—has its rewards In few documents other than the liealth Record can the physician find a minute account of his patients periods of health as well as of disease his inoculations his blood type his identifying marks and his religion Such information instantly available not only saves time but promotes accuracy. Custody and adjunction of medical records are a small price to pay for the benefits derived Similarly the performance of accounting procedures in itself unpleasant, is effective in hyposensitizing the physician to his natural aversan for bookkeeping an almost universal bote noire among physicians

The physician lacking pedagogic talent inclination and experience finds himself a teacher. His duties are two to ensure a knowledge of first aid among the crew and to increase the competence of the men of his department. Happily because teaching is a method of learning the latter aim is partially ful filled when the hospitalmen are delegated responsibility for the crew is instruction. Beyond that the hospitalmen is training is the duty of their medical officer. He in turn will profit from discussing common clinical problems and principles of treatment as he discovers sectomate of his own.

If he has had no previous military duty the shipboard doctor likely will be quite innocent of the problems and gratifications of leadership and personnel management Perhaps in no other fields is the adage so true that experience is the best teacher and aboard ship is 18 good a place as any to gain that experience A case in point is the omnipresent senior enlisted man who having devoted his career to the Medical Corps is eager to help however subtly the tyro medical officer with the intricacies of administration

VOCATIONAL INTERESTS OF MEDICAL ADMINISTRATIVE OFFICERS

ANTHONY C TUCKER Colonel MSC, USA

SINCE the establishment of the Medical Service Corps in 1947 an increasing proportion of the administrative, logistic, and tactical work of the Army Medical Service has been assigned to officers of that corps This trend will probably continue, primarily because of the emphasis on using physicians for professional duties The effectiveness of these Medical Service Corps administrative officers is, therefore, closely related to the ability of the Army Medical Service to carry out its mission

There has now been sufficient experience at all echelons to warrant making studies of the characteristics of effective officers in these assignments. The results of such studies should be helpful in career guidance and in making assignments. This study is concerned with only one aspect of the personal qualities of these officers, namely, their vocational interests. Before considering any results the device which was used to measure these vocational interests will be discussed briefly.

THE STRONG VOCATIONAL INTEREST BLANK

The Strong vocational interest blank has been used for over 25 years to measure the degree to which a man s interests correspond with those of successful men in certain selected occupations. Interests, as measured by this method, appear to be permanent during the period of a man s life covered by a military career. There is also substantial evidence that men do tend to enter, and to romain in, occupations for which their own interest sco es were high. That is the scores obtained by those completing this blank appear to predict job-satisfaction and willingness to continue in a certain line of work.

This score does not measure ability or aptitude but rather the likes and dislikes of a large number of everyday items. Any use of these scores for carear guidance should be supplemented by evidence of the man's ability to perform on the particular job

From Army Medical Serric Gr du t School Wa hington D C. Col. Tucker is now as ign d to th Offic of Armed Forces Information ad Education Department of Definer, Wathington D C.

The Strong vocational interest blank is scored on 45 occupational scales. The results are reported as standard scores which were established for each scale by setting the mean raw score of the group on which the scale was standardized equal to 50 and the standard deviation equal to 10. Letter ratings from A to C are also used to indicate degree of interest. An A rating corresponds to standard scores of 45 and above a B plus rating to scores of 40-44 a B rating to 35-39 a B minus to 30-34 and a C rating includes scores of 29 and below.

In understanding the meaning of scores on these scales it may be helpful to consider what proportion of a standardization group would probably receive each rating For example it would be expected that the scores made by physicians on the Physician Scale would be distributed approximately as follows A (45 and over) 70 percent B plus (40-45) 15 percent, B (3. 39) 9 percent, B minus (30-34) 4 percent, and C (29 and below) 2 percent

For the person completing the blank an A rating can be considered to mean that he has the interests characteristic of men successfully engaged in that occupation With a B plus rating he has less assurance that he has such interests Ratings of B and B minus should raise serious doubts as to whether or not he has these interests A rating of C indicates he does not have the interests of men in that occupation

300 OFFICERS STUDIED

The group of Vedical Service Corps officers selected for study consisted of 300 Regular Army officers who had performed satisfactorily in administrative assignments for at least five years A total of 280 of these officers completed the Strong vocational interest blank and were sent a report of their own scores on the 45 occupational scales.

Table 1 shows the average scores for the Medical Service Corps administrative officers on each of the 45 occupational scales It readily apparent that these officers do not have interests similar to physicians nor to any of the scientific professions as indicated by the scores on the first 12 scales These officers as a group also definitely do not have the interests of the following occupational groups (mean score 29 or less) carpenter city school super intendent minister musician certified public accountant partner advertising man lawer or author journalist

More important in describing the vocational interests of this group are the occupational scales on which they obtained high scores There are seven scales on which these Medical Service Corps administrative officers had average scores of 40 or higher namely production manager army officer personnel manager public administrator senior certified public accountant junior

accountant, and office worker In these occupations the average Medical Service Corps administrative officer would probably find men who are interested in the same things that interest him

TABLE 1 Mean scores of 280 Medical Service Corps administrative office s

Scale	Mean	Scale	Mean
Artist	13	Public administrator	47
Psychologist	23	Vocational counselor	39
Architect	16	YMCA secretary	31
Physician	25	Social science teacher	37
Psychiatrist	28	City school superintendent	29
Osteopath	32	Minister	20
Dentist	21	Musician	21
Vetermanan	25	Certified public accountant	
Physicist	9	partner	27
Chemist	22	Senior certified public	42
Mathematician	13	Junior accountant	40
Engineer	27	Office worker	44
Production manages	41	Purchasing agent	39
Farmer	34	Banker	36
Carpenter	23	Mortician	36
Printer	32	Pharmacist	34
Mathematics science teacher	36	Sales manager	37
Policeman	39	Real estate salesman	36
Forest service	32	Life insurance salesman	33
Army officer	41	Advertising man	29
Aviator	34	Lawyer	28
YMCA physical direct r	35	Author-journalist	24
Personnel manager	41	President	31

(Standadd two sappr mate 10)
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To sum up, the picture we get of the average Medical Service Corps administrative officer in this group is that he has many interests in common with men in the managerial, administrative, personnel and accounting fields and that he has interests in common with other Army officers. His interests are strikingly different from those of physicians and men in other scientific professions.

Based on each officer s military occupational specialty it was possible to place him in one of four groups according to his pres

ent primary duty (1) general administrative (2) supply (3) per sonnel, and (4) staff officer in higher headquarters. The mean scores of these groups on each of the seven occupational scales on which these officers had high average scores are shown in

TABLE 2 M an pat n l l by typ fduty					
\$ 1	G 1 dm trats	Supply	P 1	Staff ff high headqua	
	N 110	N 86	N 43	N 41	
P d ct m n g	41	43	39	41	
A my ff	40	41	41	41	
P so I manag	42	40	42	42	
Publ dm	47	47	48	48	
S tfdpbl untant	42	43	41	43	
Jun unta	39	41	39	40	
Off w k	43	44	45	44	

(Stadadd ti app im 10) Nambe im mpi g

table o The supply group tends to be higher on the production manager scale and the personnel group tends to be slightly higher on the personnel manager scale However the differences are all small and it appears reasonable to assume that administrative officers in different assignments have about the same vocational interests.

TABLE 3 M up t l l by nk

\$ 1	Capta	Maj	Lt. C 1 él	Clai
\$ 1	N 41	N 99	N 124	N 16
P due m tag	43	43	40	39
Army off	44	42	40	30
P an Imanag	42	42	41	36
Public dmus trato	48	47	48	43
Se so f d publ unua (44	43	42	37
Jun unta	39	40	40	36
Off wrk	43	44	44	41

⁽S dadd tatt pp mat 10 N umbe fm complust

In table 3, mean scores on these seven occupational scales are shown for the officers grouped by rank In this table the differences are negligible until the colonel group is reached There are many possible explanations of the lower mean scores of the colonel group With only 16 officers in this group these mean scores are not very reliable This study does not supply enough information to explain these low scores

TABLE 4 Distribut on of scores on the ee occupational scales

Letter	M dical Serv c Corps dministrati e fficers	Army command and tail med c 1 flic r	Physic sin
tı g	N 280	N 67	N 100

Public Adm n trator Scale

	Per nt	P re nt	Perce t
Λ (63	58	21
в+	18	21	16
В	12	14	18
в-	5	6	26
С	2	ı	19

Personnel Manager Sc 1

	Perce t	P c nt	P cent
Λ.	40	40	5
B+	16	21	8
В	18	1	17
₽-	14	17	10
С	12	21	60

Physician Scal

	Pent	Percent	Percent
Λ .	3	27	73
В+	6	6	11
В	12	18	8
B-	13	13	5
c	66	36	3
		<u> </u>	

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In a provious study 2 scores on certain occupational scales were obtained for two other groups which may be of interest in the pres

ent study A group of medical officers doing command and staff duties was selected by the Surgeon General of the Army to repre sent Medical Corps officers who are primarily performing these duties rather than dealing directly with the care of the sick. A physicians in general group was selected to represent all practicing physicians in this country

In table 4 the Medical Service Corps group the army command and staff medical group and the physicians in general group are compared on three occupational scales The percentage of each group obtaining each letter rating on each scale is shown For example on the public administrator scale 63 percent of the Medical Service Corps officers obtained scores of 45 or over that is an A rating 18 percent scored 40 44 that is a B plus rating et cetera

It is apparent from table 4 that the scores of army command and staff redical officers on the public administrator and personnel manager scales are much more similar to the Medical Service Corns administrative officer group than to the physicians in general group Even on the physician scale these Medical Corps officers are very different from the physicians in general group. In other words it appears that many of the interests of the Medical Service Coms administrative officers are very similar to those of the Med ical Corps officers doing command and staff work but are quite different from those of the average physician

SUMMARY

Strong vocational interest blanks were completed by 280 Medical Service Corps officers of the Regular Army with at least five years experience in administrative assignments. The results indicate that the following statements can be made about these officers (1) Their interests are similar to those of men in the administrative occupations and to other Army officers (2) their interests are strikingly different from those of physicians and men in other scientific professions and (3) their interests are somewhat similar to Medical Corps officers in command and staff assignments

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HFLICOPTER EVACUATION IN KOREA

SPURGEON H NEEL Jr L utenant Colonel MC USA

HELICOPTER evacuation as much as any other single factor, was responsible for the reduction of mortality among the vounded in Korea to the phenomenal figure of only 24 percent, the lowest of any major military campaign to date 'ctually, the concept of utilizing rotary wing aircraft for the evacuation of seriously wounded casualties is not a new one In 1936 at the Medical Field Service School Carlisle Barracks Pa, an autogyro was field tested as an evacuation vehicle. The idea was discarded at that time for engineering and budgetary reasons more than any defect in the basic concept During World War II the Air Force and Navy began to use heli copters for the rescue of pilots and other personnel lost at sea or in inaccessible terrain. This innovation was further developed during the interim period between Vorld War II and the Korean incident.

It was in Koren, however, that helicopter evacuation became a reality. This final fulfillment of an old concept of the Army Redical Service had to wait for two developments. The first was the acceptance of the helicopter as an organic vehicle of the Army and the second was the need for such an aircraft to sur mount the many difficulties unique to the geography of hore. The first problem was mastered by helicopter manufacturers and far sighted logistical agencies in time to answer the requirements established in horea.

It is advantageous to examine briefly the evolution of helicopter evacuation in Korea with particular emphasis on medical lessons learned Inasmuch as korea represents the only large scale, field test of helicopter evacuation under combat conditions, it should indicate trends of value to the Army Medical Service in the development of organization doctrine and procedures for the future. The clinical aspects of helicopter evacuation have been presented in a previous report.

THE BEGINNING IN 1950

Helicopter evacuation in horea vas not the result of any preconceived plan it was the result of expediency. In the early

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days of the Korean conflict, a helicopter detachment of the Third Air Rescue Squadron began to receive requests from ground ele ments for the evacuation of casualties from difficult terrain Inasmuch as this detachment was not fully occupied with its primary mission of rescuing pilots downed over water or behind enemy lines it responded to these calls By August 1950 this United States Air Force unit was answering so many calls that it found itself in the medical evacuation business

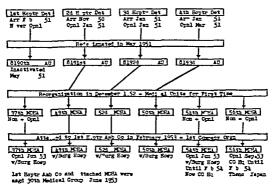
Quick to note the advantages of helicopter evacuation in terrain such as Korea the Eighth Army developed an increased interest in the program During a significant test conducted by Army and Air Force representatives on 3 August 1950 in the school vard of the Taegu Teachers College Army helicopters were adopted for the evacuation of casualties and the first procedures were established On 22 November 1950 the Second Helicopter De tachment arrived in horea. This unit equipped with four H 13 aircraft and initially assigned to the 47th Light Aviation Main tenance Company spent the remainder of the year in an intensive training program

DEVELOPMENTS IN 1951

Army helicopter evacuation was officially established on 1 January 1951 wien the Second Helicopter Detachment became operational and was attached to the 8055th Mobile Army Surgical Hospital In January 1951 two more helicopter detachments the Third and Fourth arrived in Korea with minimum operating personnel and four H 13 aircraft followed in February by the First Helicopter Detachment At this time all helicopter de tachments used in medical evacuation were assigned to the 8085th Army Unit, Eighth Army Flight Detachment and attached to forward surgical hospitals

The early days of the helicopter evacuation detachments were very stormy reflecting the chaos in Korea in the first part of 1951 The Fourth Helicopter Detachment attached to the First MASH suffered a complete breakdown of all its aircraft and had to be returned to a rear area for re equipping. It did not become operational until 9 March 1951 The First Helicopter Detachment which arrived in horea in late February was stripped of its four H 13 aircraft in March because of more critical operational re quirements Two weeks later it was given two replacement Il 23 models but the next day had to lend one to an engineer group When this aircraft was returned in April it was immediately sent to an ordnance aircraft maintenance battalion and the second aircraft transferred to the Lorean Military Advisory Group This detachment although operational under the Eighth Army Flight Detechment had still flown no combat evacuation missions

The three operational detachments, despite recurring main tenance problems involving faulty cooling fans, tail rotor cables, spark plugs, transmissions, and bearings, shortages of high octane fuel and inadequacy of spare parts, performed their mission exceptionally well with a total of only 11 aircraft they evacuated 1,985 patients during the first six months of 1951. These detachments contained only minimum pilots and supporting personnel, and there was wide variation in their organization. The impressive record of these detachments, despite their many difficulties is a tribute to the officers and men who staffed them.



MYPA to Medical Detachment Heli opter Ambulance

Figure 1 Genealogy of medical belicopter units in Korea

On 14 May 1951 all helicopter detachments were redesignated as army units (AU) Figure 1 reflects the genealogy of medical helicopter units in Korea The First Helicopter Detachment (or 8190th 'U), which still had not flown a combat evacuation mission became nonoperational on 14 May 1951, and its personnel and equipment were transferred to the three operational detachments in the early months of 1951 the fluid main line of resistance (MLR) required frequent displacement of the mobile army surgical hospitals and their attached belicopter units with their helicopter units settled into more permanent positions. Despite all the difficulties encountered, the three operational detachments evacuated 5 040 casualties during the first 12 months of operation, logging a total of 4 421 hours of flying time

Table 1 is a recapitulation of the evacuation record during 1951 by unit and by month

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M th	2d Hlep Drahm r 8191 AU	3d H I opt D ta hme t 8192 AU	4th H l c pt D t hme 8193 AU	T 123
Juary	60	10	-	70
Fbuly	173	42	20	235
Ma h	210	161	100	471
Ap il	169	46	208	423
May	111	66	275	452
Jun	101	78	155	334
7 ly	72	79	75	226
A gust	166	234	82	482
S pt mbe	224	309	139	672
Otbe	221	477	429	1127
N mb	67	166	86	319
D c mbe	87	69	73	229
T t l	1661	1737	1642	5040

ORGANIZATION DURING 1952

Tables of Organization and Equipment (T/O&E) 8 500 dated 25 August 1952 established the helicopter ambulance unit on 2 December 1952 the provisions of this new T/O&E were implemented within the Eighth Army. On that date the Army units representing helicopter evacuation detachments were inactivated and from their personnel and equipment were established the 49th 50th and 5°d Medical Detachments Helicopter Ambulance Until that date all helicopter evacuation units had been assigned to the 8085th AU Eighth Army Flight Detachment and attached to mobile army surgical hospitals Subsequent to that date helicopter evacuation elements were under the administrative as well as operational control of the Eighth Army surgeon The medical helicopter ambulance detachments were recognized as medical units—a goal that had long been set by the Army Medical Service.

PROGRESS IN 1953

Since the outset of the Korean campaign the inadequacy of the collular organization of helicopter evacuation units has been recognized Many of the early problems of these units can be traced to a lack of centralized control and unnecessary dupli cation of effort On 3 February 1953 the First Helicopter Am bulance Company (Provisional) was organized, and the scattered, small cellular detachments were welded into an integrated smoothly functioning team The company initially consisted of the three operational detachments, plus the newly activated 37th Medical Detachment. Helicopter Ambulance

TABLE 2	Medical helicopter evacuation in Korea	Œ,
	1952 1953 (combat)	

Month	1952	1953
January	516	345
February	314	281
March	332	374
April	376	516
May	639	721
Tune	915	1273
july	945	1225
August	737	-
September	892	\ ~
October	910	1 -
November	825	· ~
December	522	-
Total	7923	4735

On 1 June 1953, the First Helicopter Ambulance Company (Provisional) was assigned to the 30th Medical Group, the agen cy responsible for all evacuation within Eighth Atmy Subse quent to this assignment, two additional helicopter ambulance detachments, the 5th and 56th, were organized These latter two units were not operational during the period of hostilities On 29 August 1953, the first five Medical Service Corps pilots reported in Korea and were assigned to the First Helicopter Ambulance Company Prior to that time all medical helicopters had been flown by Armor Attillery, Infantry, Engineer, and Signal Corps officers The capabilities of these line officers in their role as medical evacuation pilots is reflected in table 2 which recapitulates the evacuation record by month for 1952 and the first seven months of 1953 As more Medical Service Corps pilots became available, line officers were released to their parent branches of the service

Though the combat evacuation mission was completed with the cessation of hostilities, emphasis was shifted to the evacuation of seriously ill and injured patients. During the peak of hemorrhagic fever incidence, the atraumatic nature of helicopter evacuation was clearly demonstrated Casualties brought to the special treatment center by helicopter presented a greatly reduced morbidity and mortality rate. The ready availability of helicopter transportation permitted the economical storage of whole blood at the army medical depot and its forward medical supply points when required, blood could be moved rapidly to forward treatment facilities. Both medical and transportation

helicopter units were used extensively during the exchange of prisoners of war Medical helicopters proved very effective in the movement of patients between army medical installations and the U S Navy hospital ship offshore

THE SITUATION IN 1954

The 56th Helicopter Ambulance Detachment was transferred to Japan on 1 February 1954 Only troop spaces needed for the establishment of a special avaiton school were transferred personnel and equipment were not moved from Korea The 54th Helicopter Ambulance Detachment based at Headquarters 30th Medical Group provided the overhead for the provisional company organization. This unit also was responsible for air evacuation to the rear of the forward surgical hospitals furnished the 30th Medical Group and Eighth Army medical section with avaition staff support and field tested certain items of auxiliary helicopter equipment. The remaining four helicopter ambulance de tachments were located at the four operational surgical hospitals.

Helicopter ambulance detachments are Army Medical Service units, assigned to the 30th Medical Group attached to the First Helicopter Ambulance Company based on compounds of surgical hospitals and under the dispatch control of corps or senior area surgeons. While this organizational structure may appear complicated it proved most effective in Korea With one exception all pilots in the First Helicopter Ambulance Company were Medical Service Corps officers. The exception an artillery captain and the company commander has been retained due to his experience and his value as a staff advisor in the tactical aspects of the helicopter exacution program.

In the early months of 1954 the shortage of officers of the Medical Corps became acute in Eighth Army requiring the closing of certain redical treatment facilities and consolidation of others Increased emphasis was placed on bringing the patient to the doctor Medical helicopters with qualified Medical Service Corps pilots again demonstrated their worth Now it was practical to pick up injured personnel at the scene of accidents and bring them rapidly to the proper medical treatment facility. The medical training of the Medical Service Corps pilots supplemented by additional instruction in Novea enabled them to give effective first aid prior to evacuating patients to a facility staff ed with a physician.

SUPPLEMENTAL EVACUATION

While it is accepted that forward helicopter evacuation is the mission of the Army Medical Service the contribution of other aviation agencies cannot be over-emphasized Auxiliary support

by the U S Air Force, Marines, and Army Transportation Corps, increased both the flexibility and over all potential of helicopter evacuation. Helicopters organic to major tactical commands were also used from time to time for evacuation within division areas. Throughout the hostilities, and during the subsequent interim period, the Marine Corps maintained the capability of evacuating their own casualties to either a Navy hospital ship or supporting Army medical installations.

Specially equipped cargo helicopters of the Air Force proved invaluable in the pickup of patients from isolated areas, par incularly when over water flights were involved improved navigational instruments, flotation gear, and other impedimenta not available to the Army Medical Service enabled the Air Force to accomplish such missions with greater speed and a greater margin of safety in each case evacuation requests were received and processed by the Army Medical Service, and those beyond the capability of currently available helicopters were referred to the appropriate supporting agency for execution This helicopter evacuation team, under the guidance of the Army Medical Service, proved most effective and is a prime example of interservice co operation

Of particular value was the contribution of the Army Trans portation Corps While the mission of its helicopter elements is stated as " to provide short haul air transport to expedite tactical operations and logistical support in forward areas of combat zones," these units accomplished an additional air evacuation mission In the closing five months of the war, one Transportation Corps helicopter company, equipped with H 19 aircraft, evacuated a total of 701 casualties Another, in action only two months, evacuated a total of 1,547 patients During one particularly heavy period of combat in an inaccessible area. this company evacuated 723 patients in one three day period. moving 301 patients in a single day. The greater capacity of the H 19 aircraft make them particularly effective in convoy or mass evacuation This auxiliary form of helicopter evacuation will prove invaluable in the future

PRINCIPLES ESTABLISHED

The experiences gained in horea cannot be denied it proved to be the testing ground of many new logistical concepts and procedures. One of the foremost was the evacuation of casualties from forward combat areas by helicopter While the limitations imposed by the horean conflict must be accepted, experiences documented here and in other articles must be critically reviewed with an eye to the future. The following lessons have been learn ed concerning helicopter evacuation.

Organization Observers in Korea were convinced that heli copter evacuation within the combat zone is the responsibility of the Army Medical Service Supplemental evacuation by other aviation agencies should be provided as available and as re quired and requested by the Army Medical Service One agency within the Army, must be responsible for evacuation within the combat zone if confusion and duplication of effort is to be peprova

The company type organization for helicopter ambulance elements is superior to the small cellular detachments provided no T/O&E 8-500 Helicopter units whether company or detach ment size should remain under the control of the field army or a centralized medical command should one be available. The in herent peed range and flexibility of ambulance helicopters dictate against their assignment to subordinate major commands

Using the First Helicopter Ambulance Company as a prototype a T/O&E for a helicopter ambulance company has been prepared staffed and submitted This company allocated to field army on a basis of one per corps will consist of three forward evacu ation platoons each containing four reconnaissance helicopters of the H 13 type plus minimum operating and supporting person of the H 10 type plus minimum operating and supporting person nel A fourth or support platoon equipped with utility heli copters of the H 19 type will provide selective evacuation be tween forward medical installations and supporting special treatment facilities Administrative and maintenance functions will be consolidated in the company headquarters. The proposed organization will improve both the efficiency and effectiveness of forward air evacuation

Control Long a basic principle of medical service control is particularly important in helicopter evacuation Integration of the evacuation and treatment components of the field army s medical service is essential Helicopter evacuation units should remain assigned to field army or an appropriate central medical command headquarters in the "type situation the dispatch of individual helicopter evacuation sorties should be the re sponsibility and function of the corps surgeon who is at a sufficiently high level to determine realistic priorities yet close enough to the scene of action to keep abreast of the immediate situation In unusual situations helicopter evacuation elements may be decentralized to the control of subordinate surgeons as any other form of logistical support is decentralized. As soon as possible however control should be regained by the highest command level capable of accomplishing the evacuation mission

Only Army Medical Service agencies should accept evacuation requests Command surgeons alone know the status of medical treatment facilities, such as surgical lags, location of special treatment teams, and projected displacements of medical instal lations Requests which exceed the capabilities of the medical service can then be referred to the appropriate supporting heli copter element for execution This system, proved in horea, ensures integration of evacuation and treatment elements and eliminates the confusion which accompanies division of responsibility

Communications No separate communications net is required to control helicopter evacuation. It is feasible and desirable to process evacuation request through medical channels over "common user" facilities to that surgeon possessing dispatch control over supporting helicopter evacuation units. The present system is economical, and ensures integration of helicopter evacuation with tactical operations in forward areas. Air ground radio communications between medical helicopters and forward medical installations were never used in Korea Reliance was placed on accurate reporting of pickup locations and visual air ground communications of panels and smoke This procedure is sound The large area over which helicopter units are capable of operating, and mechanical limitations in available radios, make it undesirable to depend on air ground electronic communi cations Weight limitations dictate against providing several types of radio equipment in the evacuation helicopter Airborne radio sets should be netted with appropriate Air Force agencies and fire support coordinating centers to provide control of air craft in flight

Personnel Helicopter pilots, particularly those flying reconnaissance type helicopters engaged in battle field pickups, should be officers of the Medical Service On occasion, they will be required to administer first and at the site of pickup prior to movement of the patient. In all cases, though they are in capable of administering treatment in flight, they must possess sufficient medical training and experience to make sudden decisions regarding the destination of patients. Medical Service pilots should receive greater consideration in the development of career patterns. Assignments are presently limited, and no progression is ensured.

Greater emphasis should be placed in integrating medical service pilots into the over all effort of the Army Medical Service There has been a tendency to feel allegiance to the non oxistent "Corps of Army Aviation" rather than to the Army Medical Service Pilots must be provided with an opportunity to

develop in the normal functions of their corps and to assume normal medical service responsibilities Recently, several ox perienced pilots were given full responsibility for staff positions in hospitals and various medical command headquarters. The importance of this program cannot be overly emphasized and must be continued if these principles of personnel management are ignored the Army Medical Service will in effect, lose some of its most capable junor officers.

Aircraft The most maligned evacuation vehicle in the Army Medical Service is the H 13 aircraft There is a great discrep ancy between the opinions of those at research and development level and those at the operating field level Those responsible for the development of evacuation aircraft believe that all such aircraft should be capable of transporting patients internally Observers in the field are convinced of the superiority of the present reconnaissance helicopter with patients transported externally on litter racks Actually both are required The larger aircraft of the H 19 and H 25 type will never replace the smaller H 13 for forward "battlefield pickups Their greater cost larger silhouette increased loading and unloading times all dictate against their utilization in the division area. Tactical commanders responsible for their mission as well as for the lives of many men will be hesitant to clear the landing of a larger helicopter in their area when they would permit the land ing of the small reconnaissance type

It is uneconomical and unnecessary to provide the Army Med ical Service with enough aircraft of the various typos to accomplish the entire medical evacuation mission on a unilateral basis Situations requiring mass evacuation (i.e. to empty a hospital for displacement or in connection with area damage control operations) can be met by requesting supplemental evacuation support from the Transportation Corps or other available aviation agency The Medical Service has long depended upon the Transportation Corps to operate its ambulance trains and the Air Force to provide high performance long range aircraft This concept is also valid in helicopter evacuation operations

Many observers in Lorea have expressed the belief that there is no requirement at the present for incorporating fixed wing aircraft in Army Medical Service air evacuation units. The advantages of the greater speed longer range and lowered main

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tenance problems inherent to fixed wing aircraft are offset by certain disadvantages. These include the maintenance problems incident to providing three instead of two aircraft for the Medical Service, the necessity for considerable additional training for Army Medical Service pilots (now qualified in rotary wing air craft only), and the requirement for improved airstrips for medical evacuation.

In the forward combat area, of primary concern is the elapsed time from wounding to initial definitive surgery. While fixed wing aircraft are faster when airborne, the necessity for surface evacuation between airfields and medical facilities plus the duplication of handling patients detract from any apparent advantage of speed. For longer evacuation flights, not feasible for helicopters, fixed wing aircraft of the Air Force and other Army aviation agencies are available. The primary requirement for fixed wing aircraft within Army medical units at present is for the control of helicopter elements. The necessary command and liaison visits, the distribution of critical spare parts, and the aerial resupply of whole blood entail missions which would be favored by organic fixed wing aircraft. However, these requirements are currently satisfied by requesting supplemental aviation support.

The flexibility of medical evacuation can be improved by the provision of certain auxiliary equipment for both reconnaissance and utility type helicopter Flotation gear is required if the Army Medical Service is to accomplish its accepted mission of evacuation anywhere within the army area, including adjacent off shore waters. The H 13 aircraft requires additional instruments to enable it safely to accomplish night missions and those flown under marginal weather conditions. It is not necessary that complete navigation instruments be provided because the accompanying loss in allowable cargo load and the requirement for a copilot will offset any advantages accruing therefrom. The Air Force with its specially equipped air rescue helicopters can execute such occasional missions as may exceed the capabilities of aircraft of the Army Medical Service.

SUMMARY

In a brief account of the evolution of medical helicopter evacuation in horea, emphasis has been put on the principles devel oped and lessons learned. The progressive assumption by the Army Medical Service of its forward air evacuation mission has been outlined and the importance of supplemental helicopter evacuation support by nonmedical aviation agencies has been evacuation. The superiority of the company type organization for medical helicopter evacuation elements is pointed out and a rec

equipment and ancillary personnel Because they must work at top speed and with maximum efficiency under physically strenuous and mentally taxing conditions every effort must be rade to shield them from disturbing influences. As with the athletic team the success of these efforts requires constant emphasis prolonged training unit loyalty and high moral

Although this principle applies to all military organizations it is believed to be more important in an evacuation hospital which is faced with special problems in the performance of its highly technical mission. In addition to giving medical care the staff of the hospital must be able and prepared to erect their own physical facilities either under cannas or by the rehabilitation of war torn buildings. They must all o be prepared to move the entire hospital on short notice with the least possible delay and to guard and defend the unit en route or on location. The means of accomplishing these objectives must be provided for so that the unit may function with a minimum of outside direction and assistance from other branches of the Army.

The complexity of the organization arises from the following factors First the Table of Organization and Equipment (T/O&E) provides a ratio of personnel to bed capacity of 0 8 person per bed as compared with 0 6 per bed in a relatively fixed numbered general hospital and 14 per bed in zone of interior hospitals Hence fewer personnel are available to perform a more complex mission Second the situation is further complicated by the fact that there are 41 different types of technical specialists among the enlisted personnel and 26 among the officers Many special ties may be the responsibility of a single person. Under these circumstances complete 24 hour coverage is a practical impossibility yet this type of service is often required for protracted periods Thus it is imperative that a constant and intensive understudy program be maintained Each person assigned to an evacuation hospital should be capable of performing the job of at least one and preferably two other specialists Furthermore his morale must be such as to make him eager to work in another technical field whenever the need arises otherwise the organ ization will break down under stress. Third constant changes in personnel due to sickness injury expiration of term of service rotation compassionate leaves and orders from higher authority coupled with the fact that qualified replacements are frequently not available or are delayed in reporting emphasize the need for training personnel to perform the 67 different types of technical 10bs In an evacuation hospital it is reasonable to expect a turn over of personnel of from 30 to 40 percent within a period of six to eight months after arrival in a combat zone

Teamwork is important because of the uneven flow of admissions and dispositions. A sudden influx of large numbers of patients requiring emergency care must be handled efficiently and with confidence. Likewise a sizable number of patients to be evacuated must be processed expeditiously. Frequently, these operations must be carried out concurrently. In either case the importance of professional and administrative records cannot be overlooked. Both functions must be conducted without confusion or disorder Split second timing and complete understanding, together with wholehearted co-operation and co-ordination, are primary requisites for these operations.

In order to be a fully productive member of the evacuation hospital team, each professional or technical specialist must be a well trained field soldier. He must also possess a thorough knowledge of several jobs other than his own and complete in formation concerning the general operation of the organization on a day to-day basis. These requisites apply to male and female officers as well as to all enlisted personnel. There is no other type of organization in the Army medical service in which they are more important.

The development of teamwork requires time, education, train ing, and constant practice if the organization is to avoid a long "shakedown" period after it gets into actual operation. Team work cannot be attained unless all personnel and equipment of the unit are concentrated in one place, and the opportunity is provided for all members to work together at the job they are to perform, at least on a simulated operational basis Newly assign ed professional personnel must be afforded the means of estab lishing uniform policies consistent with those of the Army med ical service Officers must learn to know the weaknesses and peculiarities of their associates Personalities must be given time in which to make adjustments Each person must be taught to take care of himself under field conditions. He must also learn to perform highly technical procedures with improvised means and methods Maintenance and conservation of supplies and equip ment must be stressed These important considerations cannot be imparted to personnel in a few days Several months may be required A definite training program with specific objectives must be followed through to completion and testing, in order to establish confidence and operational efficiency

IMPORTANCE OF TRAINING PROGRAM

In my opinion the mobilization and training program (ATP 8-305) prescribed for evacuation hospitals by Army Field Force directives is sound and will produce the desired results Experience with such a unit has produced convincing evidence that deviations

from this program result in serious handicaps costly errors and delays and low morale All of these are major causes for concern to the uni commander This is illustrated by the following ac count of the problems encountered by one such unit

The major portion of the enlisted personnel of an evacuation hospital were assembled at an Army post about 15 months prior to their deployment to the Far Last Command in December 1950 During this period they were employed as an augmentation unit for the post hospital in which they became key personnel but they were unable to work together as a unit Under these circum stances they could not be released for unit training until four weeks prior to departure overseas. Hence this training time all too brief had to be used to complete the individual require ments for overseas movement. No time was available for instruction or experience in such basic matters as the pitching of hos pital tents and the operation of a mess under field conditions Seven administrative officers also had been present for duty with the evacuation hospital but they were also placed on temporary duty with other organizations at the post Several of the original group were replaced a few weeks prior to the departure date. In spite of their capabilities they were unable to conduct a satis factory training program under these conditions A few Army Nurse Corps officers who were on duty at the post hospital had paper assignments to the evacuation hospital but no other as sociations with it Other than the evacuation hospital commander who reported for duty four months prior to departure time no per manently assigned medical officers were present for duty until 60 days prior to movement to the port Even then they were im mediately placed on duty in the post hospital These factors again eliminated any opportunity to conduct anything resembling a unit training program The administrative staff officers after much hard work and without benefit of professional advice were able to devise a standard operating procedure and to orient a few key noncommissioned officers concerning its provisions All officers were required to study it however no opportunity was afforded for testing these plans and procedures under simu lated operating conditions

Thus an aggregate of personnel was assembled and hastily moved to a port of embarkation with the horean combat zone as its destination. Due to crowded conditions on the transport only one hour per day could be devoted to training. Fortunately the ship was diverted to lokohams but unfortunately the profession all officers and key enlisted specialists were again placed on duty in Army hospitals throughout Japan. The administrative officers and about one half of the enlisted personnel were stationed with a newly arrived numbered general ho pital from which

the latter group was finally able to borrow a minimum amount of training equipment in order to practice tent pitching and the tech nics of establishing various parts of the hospital under canvas, one section at a time in addition, about 100 enlisted men were newly assigned to the unit a few days before it departed for the combat zone Therefore, up until the time of actually going into operation, none of the professional officers and less than half of the enlisted men, all of whom came from widely varied back grounds, ever had a chance to work together as a team

On arrival in Morea the staff of the hospital was allowed one week in which to draw its equipment and receive a brief orien tation. At the end of this period they moved 227 miles and established a 400 bed hospital within four days. The lack of previous mutual experience resulted in a prolonged "shakedown" period. Fortunately, the tactical situation permitted the unit to remain in one location for several months where it functioned more as a station hospital than as a true mobile evacuation hospital. The question of whether or not it could have functioned as effectively as it should have under active tactical circum stances is, in my mind, still very much in doubt. Had the mobil ization and training program for evacuation hospitals been fol lowed as prescribed by Army Field Forces, the unit would un doubtedly have been in a more favorable position to carry out the mission for which it was designed.

After 18 months in the combat zone, the rotation system brought about a complete turnover in personnel During this period the unit made only one move to a new location An average patient load of 75 percent of capacity prevented practice moves. Di dactic and on the job training was the only means of preparing new personnel for their jobs. Though short overlapping periods were provided for replacements and rotates, this time was not adequate for their complete orientation to hospital operations under all conditions.

SUPPLIES AND EQUIPMENT

As a general principle, an evacuation hospital should be logis tically self sufficient in direct proportion to the distance its personnel must travel in order to obtain various classes of materiel and to the difficulties which may be encountered in making the round trip to supply points. The current system of echeloned logistic support works satisfactorily under normal circumstances, but in my experience circumstances under field conditions are normal somewhat less than one half of the time. While the economy of supply demands that stocks on hand be kept to a minimum consistent with existing conditions, the application of hard and fast directives with respect to the maintenance of stock levels.

quately trained under field conditions. The channel through which reports and papers must be processed before arriving in the hands of the edutor of a professional journal is so lengthy that it dis courages the author at the outset. However professional meetings and theater medical bulletins do much to overcome this last hurdle.

Nuch information and data concerning disease and injury in the combat zone should be accumulated and studied and evacuation hospitals furnish an ideal setting Great benefits can be derived from such research activities. Hence it is a function of the hospital commender to stimulate and maintain a progressive research program

SECURITY

Fo the purpose of this article the term security" is defined as adequate protection and safety for personnel and government property as opposed to the general use of the term to mean the care of classified military information. Security of the entire hospital while in operation or in movement is a responsibility of the unit commander. The tables of organization and equipment provide the minimal means for its execution. The unit must improvise the plans and equipment for providing adequate locked storage space fire prevention measures interior guard and external walls or fences.

On occasion the unit commander may have to purchase addition al locks. Heavy chicken wire if used in triple layers and interlaced with barbed wire serves to form a barrier within food and clothing storage tents. It is desirable to have section personnel quarteed in these storage tents and to make sure that a responsible soldier is on duty in these tents at all times. Even under the e circumstances food and equipment may disappear. Frequent inventories and property checks are required together with the assistance of a well developed criminal investigation system. Only by such means can the commanding officer be reasonably sure of having supplies and equipment for operational use and protect him elf from having to pay for sizeable property losses.

A few fire extinguishers are included in the unit assemblage. The e are woefully inadequate especially during the winder courts. The unit commander will do well to improvise water or sand barrels and buckets and to distribute them liberally throughout his area. Fire drills must be held Extra fire guards must be posted and daily fire inspections must be religiously carried out. There is rothing more disconcerting to a commanding officer than to be awakened by a fire alarm and to see a ward tent di appear in smole.

Occasionally the hospital may have an extra platoon of a sep arate collecting company attached to it. This unit may be used to provide an interior guard. Such an arrangement is fine if the men are well trained and their officers are capable leaders. But a poor guard can do much more harm than good. It is better per haps to form the interior guard from regularly assigned personnel.

Fences or walls become an important security factor while the unit is in operation Again, these are not provided for in the unit assemblage Wire of all types is at a premium in the combat zone Hence, a detailed justification for new wire is required. In case it cannot be obtained, then it becomes necessary to recover wire that has been used for other purposes This can be a dangerous procedure in areas where mines and booby traps have been laid by the enemy or our own forces It is an extremely good rule to leave all wire alone unless one knows by whom and for what purpose it was last used Once the wire has been obtained it is well for the unit commander or one of his staff to know how to make the maximum use of it This can be accomplished by con structing single or double aprons in addition to multiple strands on poles Concertina wire can be very helpful in fast moving situations But walls and fences are not to be relied on alone Guards must be instructed to keep unauthorized persons away from the fence Patients can easily tear it down or pass property through it. Prowlers can quickly cut it if allowed to get close enough in a fairly stabilized situation in which friendly forces have air superiority it is well to improvise floodlights and to employ them along the fence line Fences should be more sub stantial around areas where nurses live and work, particularly when they are the only caucasian women in the combat zone

Security from guerilla attack is generally provided by surround ing units, but the hospital personnel must be trained and organ ized for defense On one occasion my unit was left in an isolated area with only one Military Police platoon within a 25 mile radius. In such instances, it is well to have a few automatic weapons and to let the indigenous population know that hospital personnel can use them effectively. In the above case the Military Police lieutenant was kind enough to park his armored car in our compound overnight. A show of strength may be extremely valuable, though it is hard to imagine an actual attack, with professional officers and nurses coming under fire and the consequent confusion. It may be worth while to consider the possibility of using ambulatory patients as reinforcements in case of a real attack.

Finally, the proximity of friendly installations which may invite enemy attack must be considered by the unit commander. The unit may move into a relatively safe area, only to have a gasoline Laboratory Findings On 18 February 1953 the erythrocyte count was 5 810 000 per cu mm hemoglobin 15 5 grams per 100 ml leukocyte count, 18 000 per cu mm with 90 percent neutrophils 8 percent lymphocytes and 2 percent monocytes. The urine was acid amber in color in quantity insufficient for specific gravity determination albumin one plus su, ar one plus acctione two plus there were four to six white blood cells and one to two red blood cells per high power field and two to four hystine casts per low power field with an occasional coarse granular cast.

On 19 February the hemoglobin was 14 grams per 100 ml, leukocyte count 19 000 per cu. mm with 92 percent neutrophils and eight percent lymphocytes Blood urea nitrogen was 10 mg per 100 ml sugar 182 mg per 100 ml CO, combining power 64 5 volumes percent serum amylase 85 units (normal laboratory values 15 to 20 units) Cophalin cholesterol flocculation (24 hours) was two plus (48 hours) three plus thymol turbidity one unit, serum bilitudia was not elevated. Total protein was 7 62 (albumin 4 84 globulin 2 78) grams per 100 ml

On 20 February a spinal tap revealed normal pressure fluid was bloody at first but clear later there were two lymphocytes per cu mm sugar was 87 mg per 100 ml bacterial culture was negative after 96 hours

Roentgenograms of the chest on 18 and 19 February did not show definite pneumonia but there were prominent markings in the right lower lung field. A roentgenogram of the abdomen on 18 February showed no free air under the diaphragm. The delineation of soft tissue was good the liver was enlarged and there was no evidence of intestinal obstruction. On 19 February a roentgenogram of the abdomen showed more gas in the small bowel and a moderate amount in the colon. No other abnormality was demonstrated however the delineation of soft tissue was not as good on the left side of the abdomen as on the previous study.

Course in Hespitel At 1930 hours on 18 February the patient was taken to the ward and a Levin tube was passed Durine the intubation the patient had a grand mal type seizure with tongue biting ending in muscle flaccidity Examination of the abdomea at this time showed minimal increase in muscle tone with good peristaltic sound like liver was palpable three fingerbreadths below the costal margin. There was minimal response to deep palpation. Rectal examination showed some tendernose high off erwise findings were not abnormal. The patient received 100 mg, of meperidine hydrochloride (demerol) and an intravenous infusion of 1 000 cc of a five percent solution of dextrose in distilled water. The following morning the patient continued to complain of upper abdominal pain radinting to the back with

associated coughing and anorexia. The temperature dropped from 101° to 99° F, the pulse increased to 120 and the blood pressure to 155/110 mm. Hg. Physical examination at this time showed three plus inflammation of the throat, depressed breath sounds and dullness in the bases of the lungs. The heart rate was rapid with no murmurs and no irregularities. The abdomen showed spasm with muscle guarding and tenderness in the upper abdomen. There was marked right upper quadrant tenderness on compression of the right chest. Peristalsis was decreased Medication at this time included meperidine hydrochloride 2000 cc of a five percent solution of dextrose in distilled water one ounce of aluminum hydroxide gel (amphojel) every two hours 8 cc of donnatal three times a day, 180 mg (300,000 units) of penicillin and 0.5 gram of streptomyon every six hours.

In the afternoon of 19 February the patient was examined at the neuropsychiatric service. It was believed that this was a case of alcoholism with convulsions due to withdrawal A con comitant abdominal process requiring surgery could not be ruled out, but the clinical picture was more suggestive of acute _astroenteritis The consultants favored treating with a "Bellevue Cocktail "He was then given an intravenous infusion of 1.000 cc of a 10 percent solution of dextrose in distilled water with 30 units of regular insulin and 1 cc of thiamine At 2000 hours the same day, because the flat film of the abdomen showed a dilated large bowel a Willer Abbott tube was passed Penstalsis was again active. The patient felt subjectively improved and the abdomen was described as no worse That evening he became restless and confused He saw imaginary people and talked with them Because he was very disoriented the next day, he was transferred to the neuropsychiatric service Diagnosis of delinium tremens was made and he was given three doses of 12 grams of chloral hydrate by mouth over a nine hour period. He was still difficult to manage and it was necessary to place him in re-

That afternoon the patient was still restless but appeared to be improved. He talked coherently, but had definite tremors of the hands and lips. His temperature rose to 1014 F. Physical examination of the abdomen showed it to be firm and slightly distended with moderate guarding in the upper abdomen. No deep tenderness or rebound tenderness was noted. The bowel sounds were described as normal. Because of the tremors and restless makes barbiturates were used although with reluctance because of apparent liver damage. At 1600 hours on 20 February, the patient's pulse was 168. He developed episodes of Chevne-Stokes respiration and became opisthotonic. It was believed that he was now more of a medical than a neuropsychiatric problem, and he was transferred to the medical ward.

On arrival physical examination was very difficult because the patient was wildly delirious. There was definite scleral interus. The lungs were clear anteriorly. The heart was border line in size with a regular tachycardia. A systolic murmur was heard at the apex and left sternal border. There was no friction rub. When a spinal tap was performed the pressure was normal. The first fluid was bloody but later cleared. At 1900 hours the patient was described as being in extremis. His temperature was 106. F and the heart rate 170 with distant tones. Breath sounds were decreased in the left anterior chest. No rales were heard. At 2030 hours he had a prolonged grand mal seizure wom ting a small amount of dark brown material. He subsequently be came very cyanotic and breathing ceased. Artificial respiration was attempted but was unsuccessful and he was pronounced dead at 2045 hours.

DISCUSSION

Do to R d Before proceeding with the discussion I would like Doctor Claypool to kindly show the films

D . Clyp | The fust series of films is a set of chest roent genograms The first one was made in Janua y 1952 and the others on 18 and 19 Februa v 1953 at the time of his admission None of them show anything p it cularly st itling but it is noted that the right side of the di phragm seems a bit higher on the f lm taken in February 1953 than on the one made a year prevously how er I do not believe that any great ignificance can be att ched to this There is no evidence of ny pneumonitis immediately abo e the diaphragm to indicate subdraphragmatic disease and no free air can be seen beneath the dia phragm on these films. The next series of films are the flat plates of th abdomen. None of these were made in the upright position, You can ee that there were no fluid levels in the stomach and no air bubble on any of the films. The first two were made on the date of admission the second two on the following d y You can see by look ing t the set of films that there was incr asing gas in the bowel The area of g s extends to the region of the splenic flexure. We see again no evidence of the outside bound y of the bowel and cating again that we have no definite evidence of free it in the perito eal cavity. The exact sign ficance of d stension of the colon over to the splenic flexure is a matter of conjecture in this case. In an adynamic leus that is progressing the will be a progress of the up to a point and if films are made I t on on will ee the air progressing beyond that point Howev again in a mechanical ileus such as would be found in an obstruction yo will have findings of g s up to a point again. Therefore we have no diagnostic features on this film These findings would be compatible with an advisant cileus due to any of the causes of per toneal irrit tion or pain in the abdomen They could also indicate a mechanical obstruction such as volvulus on the left side of the colon or an intussusception through the transverse colon to the splenic flexure. I see no evidence of gallstones or of pancreatic calcult. Do you have any questions on the films?

Doctor Hoffmen I would like to ask one or two questions Doctor Clay pool As far as you can tell the psoas shadows are fairly well out lined From that would you say that fluid in the peritoneal cavity would be minimal?

Doctor Cloppool That's right The presence of the psoas shadows and also the fact that there are well defined properitoneal fat lines which are usually obliterated if there is any great amount of fluid present would rule out assites

Doctor Hoffm Do you think there is more than one point of obstruction there? Do you think that this obstruction is distal to the splenic flexure?

Doctor Claypool No my point is simply that the gas goes up to the splenic flexure of the colon. Beyond that we cannot be sure

Do tr Hoffmen And just one other question about the diaphragm can you give me any more information about that? As far as you are concerned the position is not abnormal?

Docto Cloypool It is within the limits of normal There is no haziness of the diaphragm such as would occur if there was an abscess or infectious disease

Doctor Hoffmon How positive are these films in this particular position in detecting air or gas under the diaphragm?

Docto Cloyp ! These particular films are made in the flat position so they are of no value whatsoever. The chest films will show an appreciable amount of gas under the diaphragm however a small amount might not be detected immediately beneath the diaphragm on chest technic.

Doctor Hoffm to Do you think that the technic is adequate here to rule out gas under the diaphragm?

Doctor Cl ypo l I would certainly favor the fact that we have enough evidence here to assume there is no free air in the peritoneal cavity

D ctor Hoffm ne Was there anything about the renal shadows?

Do to Cloppool Nothing that would be of diagnostic help here We mentioned previously in our discussion that there was some lobulation of the right renal shadows but I believe that that was just fetal lobulation.

Lt. Col Fr kl G Hoffm USAF (MC) Chi f R sprtory D sease S ti

Thank you Doctor Claypool In proceeding to discuss this case I think that we must confine our discussion to those conditions which might produce this catastrophic series of events. I would like to dismiss merely in passing some of the few common causes of abdominal pain which arise from lesions above the diaphraem name ly myocardial infarct and acute pericarditis I am sure that many of u are not aware all of the time that acute pericard tis can simulate an acute abdomen very frequently with abdominal pain spasm and shock Lower lobe pneumonia and dissecting aortic anewysm must be mentioned However I believe there is no evidence in the history or subsequent finding to substantiate any of these possibilities Like wise we may on the basis of the available information rule out malie nant lesions especially lymphoma in which invasion of vital organ may result in rubture perforation or obstruction I do not believe we need to consider seriously a granulomatous involvement of the abdom inal organs Amebic ab cess and primary liver dise e hepatoma with rupture and hemoperaton um do not warrant serious consideration.

The nitial elevation of the diaphragm worried me a little bit but I do not think that that is sign ficant at least from what Doctor Clay pool has said We might consider some other entities One I would like to talk about is cute p rphyria. We all know t is an uncommon entity a d frequently is manif sted by the trad of abdominal pain which is usually colicky and in the lower abdomen, neurologic m nifestations and a port wine wine Death in these cases is usually due to in as cend ng par lysis with respiratory failure I do not believe we are seriously concerned with this disea e in this particular in tance nor do I think we must consider any other metabolic diseases with bdominal manifest tions. I thought seriously bout volvulus of the sigmoid n vew of the xr v findings However with volvulus of the sigmoid frequently we have a history of constipation of long duration it wally there ar mld attacks of abdomin I pain until the acute obstru t on occurs. The major ty of patients with volvulus usually are in the age group between 40 and 70 years and the pain of an cute attack usually is continuous with colicky exacerb tions characteri tic also is the extreme abdominal dist usion which one can usually determine if the abdom nal wall is lax d Under the conditions also it may be pos sible to outli e the sigmoid loop. The characteristic x ray findings to my knowledge are tr mendous d latation of the sigmoid loop with flu d levels and often two points of obstruction at the sites where the bowel may be twist d

Mesenteric vascular occlusion is usually a dramatic event and fre quently presents a baffling p blem It i more common after the fifth decade in this sequelae are seve ope toneal irritation and small bowel obstruction. The problem is usually not accurately solved before I parotomy or necropsy Sometime it follows abdominal pelvic operations. The atterial circulation is occluded in about 60 percent of the patients and in 90 percent of these ome branch of the superior mesen-

teric vessel is usually involved Embolism endarteritis or a dislodged atheromatous plaque may usually account for the occlusion Venous mesenteric occlusion usually follows thrombosis or phlebitis Pain is usually constant or paroxysmal and is generalized with vomiting eventually becoming fecal Bloody diarrhea frequently occurs par ticularly when necrosis develops I do not think we need seriously consider this at this time

I would like to pass on however to several other conditions which are less esoteric but I think are common enough that we have to give serious consideration to them First is acute appendicitis with per foration I guess we have all been taught that this should always be considered in the differential diagnosis of any acute abdomen I believe that in this particular instance the history with the clinical findings are a little bit atypical for a ruptured appendix however there is no such thing as a typical picture Be that as it may I prefer at this time that we consider other things One entity is acute cholecystitis with perforation and bile peritonitis. I think there are three features which most of us keep in mind when making this diagnosis. One is the typical pain that is constant and severe in the epigastric region with reference to the right posterior chest The pain is severe early and later it becomes constant and dull The second feature is a tenderness and spasm beneath the right costal margin and thirdly a palpable mass in the right upper quadrant I think that without this triad the diagnosis clinically cannot be made with certainty

We now come down to the two controversial possibilities as far as I am concerned in this patient One is acute hemorrhagic pancreatitis I am sure that was considered quite strongly by the doctors who saw this patient during his hospitalization and I am certain that we are all familiar with the severe pain usually epigastric or in the right upper quadrant It is usually persistent but it may be paroxysmal or colicky with radiation to the back Nausea and vomiting are quite common Temperature elevation is usually slight unless suppuration or gangrene is associated Most textbooks state that the abdominal rigidity which one sees with other lesions is not as striking in acute pancreatitis as it is with other acute abdominal conditions Peristalsis is usually inaudiole and jaundice is quite a common feature in acute pancreatitis Although the history and the appearance of the patient suggested jaundice the serum bilirubin was reported as not being increased and I think that is one laboratory finding that we can put a good deal of reliance on in deciding whether or not a patient is icteric Not infrequently signs of hypocalcemic tetany have been observed during the course of acute pancreatitis I do not believe that the epi sode of the grand mal seizure which was mentioned in the protocol was confused with that of hypocalcemic tetany Of course the elevated serum amylase is probably the most constant feature which I think most of us rely on in making a diagnosis of acute pancreatitis We are all aware that moderate elevation of the serum amylase can occur

in rany conditions other than acute pancerat its I believe that although the serum amylase according to the figures that we have available was slightly elevated in this particular of tent it was in the indeterminate zone. I think that I would like to dismiss the diagnosis of acute pancer it is although I still have some hesitancy in doing so

I would like however to discuss perforated peptic ulcer I am sure we are all fam l with this dramatic abdominal emergency in which a comparatively healthy person is transformed in a matter of minutes to a critically ill pat ent. The early picture of severe chemical peri tonit s due to rapid d sseminat on of acid gastric contents with hypotension t chycardia and pale ashen f cies and a boardlike abdomen are all too familiar to us. This picture subsides rather rapidly and is probably due to the dilution of the chemicals with transudate. The p tient spontaneously come out of the shock with associated subsidenc of his physical find ags Subsequently if the disease is al low d to continue or prog ess over 12 hours per tonitis becomes generalized with your tipe fever leukocytosis ileus and distension We are all aware of the fact that perforation is very common in alcohol cs and is probably the result of stimulation of the gastric juice with failure to buffer this with the normal intake of food. There is a reainly a lot of difficulty in obtaining a previous history of ulcer in alcoholics nd not infrequently we are unable to obtain any previous history when a patient is first seen, how ver following recov y in a large per cent g of cases a typical hi tory of many year duration not infrequently obtained

Fo the diagnosis of perforation, I would like to e air under the alaphragm but because we know that in about 60 percent of the patterns it is not een, and because the tehnic in this particuly rexamination was not a good as we would have liked to have seen it I do not know that we can really but too much importance on this negative finding. The term nall event in this patient. I think is that of aspution which asphyrical due to 1 surfacts tract obstruction.

The enlarged I we probably demands an xplanation I do not that we have any really good evidence either clinically or from the labor atory point of view of severe liver des E. The only finding was that of an elevat deephalin-cholesterol floccul tion. I believe that the bepationegaly perhaps may be explainable on the basis of try infiltration, possibly on a alcoholic bass. We could cert only go on and dictues many of the other possibly it is but I think I will say that my more so not this tree is that the pitter prob bly had a perforated pept culcer with gene alized peritonits. I am not willing to say whether or not be taid any localized collection of puss under the diaphragmor in the pelic cavity. Also be may vity well have had fatty of I trion of the I edu, to Icoholic intake and an aspiration pneumonits.

Doctor Tobin How do you explain the stiff neck?

Doctor Hoffmon Well I do not think it is due to any irritation of the meninges from infection I think that with severe peritoneal irritation we may rather frequently see spasm of the paraspinal muscles with perhaps a meningismus but I certainly have no reason to suspect any central nervous system lesions either bacterial or malignant, to explain it I cannot explain this man's convulsive episodes Perhaps the neuro-byschiatric service can help on that.

Doctor Reed Do you think that a patient with perforated peptic ulcer would have sought hospitalization more quickly than 36 hours after onset? And also would he not have more severe cramping pain with boardlike rigidity?

Doctor Hoffmon I believe that depends on the person s personality make-up. It depends first of all on the level of pain which these persons can endure. Secondly an alcoholic may have his mental processes sufficiently hindered so that he may not be aware of pain as ordinary persons would I agree with you that in the majority of persons one of the most severe types of pain that occurs is from the perforated peptic ulter.

Doctor R ed One other question You have ruled out lesions of the heart I would like to ask you how common it is in an external examination with the stethoscope not to find any physical change in the heart when there is a true coronary occlusion with diaphragmatic irritation and periumbilical pain?

Docto Hoffmon Well without an electrocardiogram it is impossible to make a definite diagnosis of a myocardial infarct from physical examination. The only thing that may help you is the appearance of a friction rub which frequently does not appear until a day or two after the onset of the disease. In pericarditis you may see it early There were no electrocardiograms taken in this case. The man's blood pressure was presumably not low so that I think that it would be a very tenuous diagnosis.

Docto R ed Thank you very much Doctor Hoffman I think you have covered the differential diagnosis with the most likely diagnoses mentioned I would like to have Doctor Chambers* discuss the neuropsychiatric aspects of this case at this time

Doeto Chombers The primary picture presented by this patient with reference to his neuropsychiatric status seems to me primarily that of a psychosis superimposed upon the physical difficulties which were of primary interest when he came in It is easy to be conclusive as to what the psychic process was it was delirium. It is a little bit more difficult to say what are the factors involved in the delirium itself it was called delirium tremens when he was transferred to the neuro

Capt William N Chambes USAF (MC) Chi f Clos d W d Secti n, N wop ych

psychiatric service the background data for this is quite positive and the time sequence is quite correct however the broader scope of delurium in general has to be considered first.

The classic features which we would see in a dlittum from any cause are first a state of clouded consciousness with defects of grasp and or entation of a fluctuating quality and second a state of distortion of reality which his been refired to by some authors as illusional deliusional and hallucinator. In this case the delirium is not clearly any one of these things yet it borrows somewhat from all of them. In considering delirium in the broad sense we must search for a combination of these two factors. A third factor in the clinical triad of delirium is an affectic e disturbance usually that of fear and it is to be roted that it is congruent to the mental content of the psychotic thought process of the moment. So much for deliri in in general

The specific bas s the causative agent of this patient s delirium is a little bit less easily arrived at With respect to the psychiatric consultation which occurred on the second day there is a clear history of alcoholism refe ed to I do not know whether that had been pre sumably available the entire time. There is no reason to doubt that this ma had been a severe alcoholic The effects of alcoholism on him and is contribution to the delirium re less cle r Presumably he had out drinking at the time of the onset of symptoms-it is not stated but I d finitely think t would follow -so that the period between that t me and the onset of the psychotic state would be around 72 hours In this interval we would expect to see withdrawal afte see dy drinking lead to psychosis in a susceptible person. Considering now the alcoholic causes part cularly of the delitium prodr me fits well with this picture also. The grand mal convulsion during a painful or unpleasant stimulus was consistent with this picture. It preceded the onset of psycho is by some 24 hours. The course of the psychosis is not necessarily p thognomonic but was consi tent with delicium tremens. We note that the onset was late in the second d v of hos pital ation the patient continued to be psychotic until some time not specifically stated and by afternoon was referred to as speaking coherently. At this time he was again transferred to the medical serv ice and while there had another psychotic episode. This fluctuating stat of the psychotic process is q it consistent with delirium trehowever against if you will the garden variety of delirium tremens is the mode of onset in this patient. The complaint of pain is by no means a fr quent feature in delirium tremens and is suggestive I think that the delir um tself is on nother basis or is a super imposition. I m much mo inclined to think that the delirium is due to multiple causes rather than due to alcoholic withdrawal. In the par ticular sensiti ity found in alcohol c withdrawal pain itself is a stimulus to a delirious state. The ev dences the vital signs and the hema tologic findin s ta se the question of wh ther or not any infection existed at le st the patient was under considerable stress from pain

and the physical process being experienced at the time. I think that it would have been an error to have said this is simple delirium tre imposition of an intercurrent delirium on a grave physical ailness. We cannot be sure as to whether this was delirium tremens or delirium from a combination of factors. I would tend to favor the latter myself with alcohol probably having set the stage. In such an event and without physical illnesses, this man might have had episodes of delirium tremens but would not have a prejudiced course as to physical illness. Any questions about the psychiatric status?

Docto Gotto Do you think this man had grand mal epilepsy and may have been having attacks?

Doctor Chambers I would not be particularly prone to think so The convulsion itself is not infrequent in withdrawal as a prodrome to delirium tremens itself and I think with this particular history that that is the thing you have to think of first, rather than any idiopathic epilepsy I would not question that he did have grand mal convulsions at the times cited.

Doeto Gotto It also appears that he had some generalized toxic condition.

Doeto Chombe's Yes he certainly could because that is the point I mentioned particularly—that this delirium has to be of somewhat unspecified causes. That it is a delirium is clear but its course is less clear at this time. In either event though I would like to say this about delirium that this is usually just an incidental finding superimposed on other pictures. Certainly it is not the major picture in this case it is a complicating factor.

Doctor R ed Doctor Chambers could you exclude an abdominal crisis of syphilis with the history as stated?

Doctor Ch mbe One would have to think of it but that there are physical signs to accompany the pain I think allows us rather quickly to exclude that The presence of fever the suggestion of hemoconcentration in the initial laboratory work plus the frank elevation of white blood cells—all could have been due to hemoconcentration. Fever and the steady quality of the pain are also somewhat against it elevated blood pressure is against it as well. It is infrequent that you find these physical findings with the gastric crisis alone.

Doctor Reed Thank you very much Doctor Chambers I would like to ask Doctor Aiken to review the surgical aspects of this case for us

Docto Alk ne I would like to say that I agree with Doctor Hoffman in dismissing pancreatitis although with a few slight reservations as a cause of this man's death and also I agree with him in dismissing

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M ; David W Aiken USAF (MC) Chi f G ral Surg cal S ction Surgi al Service

other intra abdominal conditions that he mentioned and dismissed This patient died of a fulminating infection. I believe there is considerable evidence in the physical examination and description of the hospital course to show that he did not have a significant degree of peritonitis On a number of occasions apparently rather deep pal pation into the abdomen was possible sufficiently to outline the border of the liver I think that the rectal examination showing some tender ness high may not be significant as regards peritonitis because appar ently the patient reacted to what is a s vere stimulus in that type of examination Just as Doctor Hoffman is willing to accept the negative x ray evidence for the diagnosis of perforated peptic ulcer so I am willing to eliminate that possibility

Speaking of fulminating infection and the enlarged liver I suppose we should mention although in a negative fashion cute septic pyle phlebitis of the live which is nearly always second ry to some infection in som organ of the abdomen I believe that this p tient falls fairly cle rly Ithough with some rese vati n which I will mention into that group of patients who die f om perforation of the lower esoph agu There is a diagnostic catego y called sponta eous perforati n of the esophagus so called bec us no pathologic co dition i found at the site of perf ratio I think that probably this pit entit lls into that category. The most ty of such patients it alcoholics they come in with h stor s of severe epigast ic p in going through to the back and there is usually a history of vomiting However there does ot have to be history f vomiti g a d p ntaneous rupture of the esophagus have occur d following t n ng at stool I ft ng of a heavy weight labor and delivery and particularly fter a grand mal epileptic se zure

The st tement in the histo y however that he had associated n u and g gg1 g ndicate to me that undoubtedly ntra esophageal pr s sure was increased en ugh to c se a ruptur. The us al cour e of this condition is that a severe fulminating always fatal mediastin tis de velops Now this would explain the pain and stiffness in the neck and possibly e on the redness in the throat f it got that high On of the reservations that I have to m ke in this diagnosis the feet that we do not have ny concrete ev dence of its rupturing nto a pleural ca ity which ne rly always but not absolutely alway happen. There cer t nly wa plenty of dulin s and decreased beath so nds ment oned which c uld g alo g w th fluid in a pleur I cavity You would expect th t ral or gurgl s would have been he rd but I am willing to over look this in got go t on a limb for diagnosis

In regard to the use of the Miller Abbott tube for a dilated large bowel I would like to m ntion that apparently the physici ns who u ed the tube were doing so a a last resort. They prob bly really did not believe that the tube wo ld ffectively decompres the dilated larg bowel The only way to decompress in obstructed large bowel is by cecostomy or transverse colostomy and certainly they did not believe they had a strong enough case to warrant those measures so it was just thrown in because nothing else was being effective I note there was right upper quadrant tenderness upon compression of the right side of the chest. Frequently patients with this condition have an abdomen which is actually boardlike which he apparently did not have or if he did it relaxed from time to time particularly after a grand mal type of seizure. In regard to this condition there are probably many more than a dozen cases that have now been reported in the literature as having been diagnosed antemortem and operated on with recovery and perhaps 200 or 300 fatal cases reported.

The operative treatment is to open the chest the left chest probably close the perforation drain the mediastinum into the pleural cavity and then drain the pleural cavity I do not think anybody is doing mediastinotomies to relieve this area of infection from this condition I suppose there are other lower esophageal lesions I should mention as possible causes of perforation. Ulcerations do occur in hiatus hernia Pulsion diverticula do not commonly perforate they simply enlarge and cause symptoms of obstruction. Are there any questions?

Docto T bin Why did you rule out acute pancreatitis so quickly?

Do for A ke Because I am willing to accept the serum amylase level of 85 as being just slightly over the normal limit and I like to have a really good amylase level to make that diagnosis

Do tor Tobin In acute pancreatitis the serum amylase may be elevated early and fall rapidly

Doeto Aik It may come down rather rapidly that is true It is a difficult diagnosis to make without the elevated amylase and I simply think that there is enough evidence to point toward my diagnosis, so that I am willing to explain it all on that basis Of course alcoholism and pancreatitis very commonly go together Maybe he had that too

Docto Reed Doctor Aiken do you find x ray evidence of perforation of the esophagus such as widened mediastinum?

Doctor Alken Not necessarily

Doctor Reed Splinting of the diaphragm?

Docto Aiken Well I don t know

poeto Cloppool Yes you usually find a widened mediastinum al though I am sure there are cases of rupture of the esophagus in which you will not find evidence of mediastinitis. Another common x ray finding in this condition is mediastinal emphysema. There is no evidence of these findings in this case.

Doctor Aike The most recent good article on this is one by Mackler I may be a little bit prejudiced on the diagnosis because one other

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article I refer to was in the Hartford Hospital Bulletin seven years ago by Aiken and Lampson.

Do t Re d Thank you very much, Doctor Aiken for that interesting discussion on perforation of the lower esophagus Doctor Gatto would you care to comment on this case?

Doe'n 6 to During this patient's rapid downhill course he had increasingly severe symptoms which involved not only his abdomen and his central nervous system but also his vascular system. I am impressed by the generalized concury that the patient den nsur ted His pulse climbed to 168 his heart sounds were distant and he apper red to be in evere shock He showed definite signs of meningeal utilization or cerebral involvement. Because the history gave no complete neurologic examination one cannot be sure what neurologic examination on unconscious patients or even disturbed patients with some degree of accuracy and understanding. This should be done rep atedly in such cases as this one.

The development of a psychosis during the course of severe organic disease often creates a dilemma The question frequently arises Where is the patient best treated? In general it would be true that if the n propsychiatric facility has excell or medical facilities uself together with personnel wh understand the nursing car of physic lly sick as well as psychiatrically disturbed patients then it is pos ible for a pat ent to be treated on a p volute c serv ce however who such care is not available and a patient develops a psycho is during the cour e of an illness which requires spec fic and constant medical care it may be best to keep him on the service in charge of his case and s ek psychiatric ass tance to follow his mental status and to provide psychiatr c therapy that may be needed I say this dvisedly because of what I hav known in the past to have happened to c reain per ons who developed psychoses and were too quickly transferred to psychiatric services w thout true evaluation of their underlying organic condition. The discovery of individual brain tumors on a psychiatric service is not incommon. I remember further the case of a patient who had evere bilateral pneumoconiosis underlying a psychosis and who would have done much better if he had been on a medical ward receiving oxygen than on a psychiatric service being treated as a schizophrenic The decision as to the proper location for the treatment of this pat ent wa ob I usly of importance in his treatment. The fact that he had an alcohol c background perhaps confused the is we leading to his too early tr nafer to the psychiatric service with the diagnosis of simple alcoholic withdrawal however the degree of seve e peneralized abdominal distr s and the severe delitium appear to have been far in excess of what we commonly see in alcoholic withdrawal and delirium tremens Doctor Chamber's discussion aprly indicates that this delirium was defin tely of a toxic or infectious nature which perhaps was only

influenced by the earlier physiologic dependence on alcohol I must point out that in this patient the use of barbiturates for sedation was not advisable. Perhaps paraldehyde would have been more useful for sedation and also for preventing further confusion of his clinical pic ture. I would like to taise one point in view of what appears to be a generalized toxic picture. Is there any other generalized organic condition that should be considered in this patient? Sometimes following alcoholic debauches or debilitation overwhelming infectious or toxic reactions may occur which seem to present generalized clinical pictures very much like the Waterhouse Friderichsen syndrome in which many systems are involved and physiologic mechanisms are greatly impaired I wonder if we may hear a few words on this

Doctor Hoffmon I am not familiar with the Waterhouse Friderichsen in association with acute alcoholism. The usual causes are septicemia due to Neisseria intracellularis and occasionally to Hemophilus in fluenzae in which one sees widespread destruction of the adrenal cortex. Usually the clinical manifestations are shock and severe pur pura. I do not think this patient fits into that category at all

Doesor Board I would like to ask you if you had considered the diagnosis of carbon tetrachloride poisoning?

Doctor Hoffman Usually with carbon tetrachloride poisoning you expect a lot more in the way of findings. Early there is oliguria with azotemia and in fatal cases uremia and/or evidences of toxic hepa titis. You expect elevation of the blood urea nitrogen and you might see severe hematuria. Of course carbon tetrachloride can pick out either the liver of the kidney or both and just on the basis of what we have here I do not think that we can say clinically that this man had carbon tetrachloride poisoning.

Doctor Goen 1 r Concerning Doctor Aiken's remarks I would not consider the diagnosis of perforated esophagus. In the patients I have had an opportunity to see there was a very definite sudden onset They coughed retched vomited or had a bowel movement and felr a sudden sharp pain in the chest there was no question about the onset. The pain was in the anterior and posterior chest of was pleuritic and was not primarily an abdominal pain. There were no abdom inal findings in these patients. I have heard of cases where there were no perforations into the pleural cavity although those patients I have seen did have perforation into the left pleural cavity and had a large pneumothorax In some the chest was filled with fluid and esophageal contents I can concede it possible that the pleuras are not perforated but any patient who does not have a pneumothorax and does not have air in the mediastinum does not have perforation of the esophagus The mediastinum in this region is very soft and the pressure relationship between esophagus and mediastinum would attract air into the

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mediastinum. Chest roentgenograms of this patient on 18 and 19 February were negative and there never were any findings primarily referable to the chest. Of the many diagnoses that could be considered. I would think of perforation of the esophagus last.

Dr Hoffman's diag oses

- 1 Perforated peptic ulcer
- 2 Fatty infiltration of liver 3 Appration pneumonitis

Dr Aiken's diagnosis

1 Perforation of lower esophagus

PATHOLOGIC FINDINGS

D ! R d This patient had an acute hemorrhagic necrotizing pancreatitis with extensive involvement of the abdominal fat and mesentery The pancre s was enveloped in a capsule of blood and large areas of necrosis stretched from the midportion of the pancreas down along the left abdominal gutter and f llowed the descending colon to the pelvis indicating extensive lipase activity and intra abdominal chemi cal toxicity Other gross findings were moderate bilateral hydrothorax aspiration of vomitus and myocardial dilatation. The liver was definitely enlarged weighin, 2 750 grams and was quite pale yellow ind smooth. There was no evidence of cholel thiasis and there were no calculi in the pancreatic ducts Vi cro copic secti ns of the pancre s showed necrosis of blood vessel walls and p necestic tissue. The sections of the liver showed marked fatty changes involving 11 sec t one of the lobul The lungs showed n area of pneumon ti

In tetrospect I m ght say that the clin cal evidence for acute hemor thagic pancreatitis can be found in the history but when a physi ian is confronted with the type of clinical picture here it ca be very diffecult to decide on one defin te diagnosis

Pathologic diagnoses

- 1 Acute hemorrhagic pancreatitis
 - 2 Fatty degeneration of liver
- 3 Pneumonitis

Do t T bi When this patient entered the hospit I everyone thought he obviously had an acute abdomen but the diagno is became less obvious as time went one particularly after the convulsion The combination of con ulsion stiff neck and deluium suggested the pos sibility of mening tis

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Atypical Lower Nephron Nephrosis

BERT G LEIGH Capta n. MC. USA JAMES S BERGER Major MC USA JAMES E GRAHAM Colonel MC USA

ANY AUTHORS: ** have stressed as cardinal signs of the acute phase of lower nephron nephrosis antecedent shock followed by oliguria, hypertension proteinuria, and excretion of granular or pigment casts in the urine Like wise, they correlate clinically the rapid elevation of nonprotein nitrogen and serum potassium in the patient displaying full blown symptoms of uremia. If the patient survives the anuric phase of the disease he progresses to the diuretic or recovery phase during which large amounts of urine and electrolytes will be excreted. The serum potassium and sodium levels drop followed by a gradual fall in nonprotein nitrogen and if proper safeguards are not taken a salt depletion syndrome may develop.

The following is an atypical case of lower nephron nephrosis in that the scute phase of the disease was never clinically evident. The patient died during the distretic phase with hyper kalemia and azotemia.

CASE REPORT

A 25 year old soldier was injured in an aircraft accident at 0300 hours on 14 April 1953 Abour 15 hours elapsed before he received medical aid. He was in shock when examined at the site of the wreck age. The blood pressure was 90/60 mm Hg pulse 100 and the skin was pale and claimy. He had several large lacerations about the face and head with bilateral periorbital hematomas. Complete paraplegia from the level of the first lumbar vertebra was present vith abrasions over the spine at this level. Several large contusions were visible over the sternum. An indwelling catheter was inserted into the bladder but no urine was obtained. The patient received 1 000 cc. of whole blood 1 000 cc. of dexitian and 10 mg of morphine while at the wrecking and en rouse to the hospital. On his arrival at this hospital he began exciting small amounts of amber-colored urine which was immediately sent to the laboratory for analysis. The patient is sensorium was now clear, his skin was warm, and he appeared fairly well hydrated.

Laboratory Data on Admission The hematocrit was 35 percent hemoglobin 11 grams per 100 cc and the white blood cell count

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11 200 with 90 percent neutrophils and 10 percent lymphocytes per cubic millimeter Urinalysis revealed amber color acid re ction 1 010 specific gravity a trace of albumin an occasional white blood cell and from 10 to 12 red blood cells per microscopic high powered feld No casts were observed A markedly impacted fracture of the body of the first lumbar vertebra and complete disruption of the pedicular and neur I arch structures of the first lumbar vertebra with disturbed re lationship of the interspaces in this area were demonstrable by pent genoer ms There was also a fracture f the inferior portion of the body of the sternum at the junction with the xipho d

Course in the Hospital Shortly after admission the patient was taken to the operating room where his face was cle used and sutured A I minectomy revealed marked c mpr s ion and maceration of the cord t the level of the first lumbar vert by Loose fragments of bone were removed and the incision clo ed. He received 500 cc. of whole blood during the procedur and left the oper ting room in good con dition He was placed on a Stryker frame and given ant biotics intra venous fluids and a booster injection of tetanus toxoid

During the next 24 hours the patient improv d consid bly His blood pre ure and pulse were normal he was taking clear fluids by mouth and his 24 h ur urinary output increased to 1500 cc Repeat urinalysis obtained fom an indwelling catheter showed a specific grav ty of 1 012 one plus albumin cca ional white blood cells and from six to eight ed blood cell per high powered field Between 15 and 22 April the patient showed progressive imp ovement His uri nary output varied from 1 500 to 2 000 cc per day He w afebrile comfortabl receiving vis tor fo short periods of time and ating a regular diet On the fite noon of 22 April the p tient becam p p ehensive nd compl ined of a c ugh which w productive of min mal amounts of old blood For the first time a per cardi I f ict on rub was noted over the apex Because of hi stern I fr cture an electro cardiogram and a roentg nogram of the chest were made. The roent genogram sh wed no change The electroca diogr phic findings were suggest we of hyperk lemia His urinary output rem ined at 1 500 cc and he oral et ke was excellent On the ev n ng of 23 Aprel the p tient bec m dyspn ic and d soriented and developed cyanosi limited to his neck and the upper part of his chest. The di gnosis of a superior vena cava syndrome w considered however venous pressure and circulation times were normal. The che t was clear clin cally and on roentgenographic examination Repeat electrocardiograms showed severe hype kalemi Hematocrit was 34 percent and the hemoglobin 9 8 grams per 100 cc. The blood pres ure a d pulse remained nor mal Serum potas jum w 87 serum sodium 128 chlor de 93 and the carbon d ox de cap city was 187 all in mEq/L. The blood mea nittogen was 245 mg per 100 cc Unfortunately urine electrolyte studies were not available

A tentative diagnosis of lower nephron nephrosis was made even though the patient's urinary output remained high except for the first 24 hours after his injury 10 days before

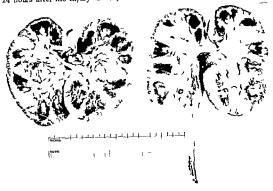


Figure 1 Hemisections of the kidneys showing intense congestion of medul lay py amids and pole and swollen cortices

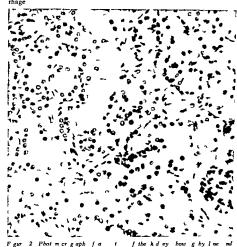
Ten percent dextrose solution with insulin were immediately started the patient's head was elevated and oxygen was given by catheter and tent His urinary output was measured howly and never dropped below 75 cc per hour until death Fluids were carefully administered intravenously so as not to overhydrate the patient On 24 April jejunal perfusion was begun after the method of kelly and Hill'in an effort to reduce the setum potassium. The perfusion fluid (1 200 cc) was given by tube over a six hour period and 1 150 cc aspirated back However because the patient developed dependent edema and early pulmonary edema all infusions were stopped. At 0200 hours 25 April the patient died 11 days after his injury.

Necropsy Examination Gross examination. Gross postmortem examination revealed essentially the following Pulmonary edema kidneys which were overweight and edematious showing dusky medullate consistent with lower nephron nephrosis (fig. 1) crushed lower lumbar portion of the spinal cord a fractured sternum and extensive hemor thage within the pectoralis major and minor muscles iliopsoas and sacrospinalis group of muscles

Microscopic examination On microscopic examination within the cortex of the kidneys numerous areas of tubular degeneration were

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noted This was present throughout the cortex and involved principally the distal convoluted tubules and casts were present within thesectors Areas of tubular interstitual rupture were seen and thrombinito veins within the ascending loop of Henle and collecting tubules were noted Scarring in many areas was interpreted as an indication of healing (fig 2) The lung showed a marked degree of edema and hemorrhage within the alveolar spaces. Masses of macrophages typical of heart filure cells were present within the alveoli Sections of the heart disclosed a slight amount of edema but no fibrosis or hemorrhage.



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DISCUSSION

This patient presented many unusual manifestations of lower nephron nephrosis

The patient was anuric for 15 hours following his injury but his urinary output reached normal levels on the second day and

remained high until the hour of his death, 11 days later No gran ular or pigment casts were observed in his urine and the relative ly few red blood cells were attributed to the indwelling catheter He did not develop evidence of hypertension, although this may have been due to his paraplegia and concomitant loss of sympathetic tone His relatively benign course between the second and ninth day was likewise unusual Thus, of the various clinical, urinary, and vascular signs which Lucke' described, anuria was present for only a short time

Because the patient died during the diuretic phase of the disease, it is difficult to account for the extremely high serum potassium in the face of high urinary output As far as we know this is the only patient with this disease in whom the serum potassium continued to rise to high levels during the diuretic stage 7 * 10 Indeed, the excessive potassium and sodium loss during this period is usually stressed in the literature Moyer's stated that "because the rate of excretion of potassium salts by the kidney is extremely rapid, compared to that of sodium salts, potassium excesses do not occur spontaneously unless oligura or anuria is present."

We postulate two mechanisms for this unusual occurrence

- 1 The vast amount of direct tissue destruction which the patient sustained, coupled with the loss of muscle substance as a result of the paraplegic state, conspired to release tre mendous amounts of potassium and other products of protein catabolism into the extracellular compartment which the kid neys, in their damaged state could not clear even with ordinarily adequate urine volume
- 2 The second possibility, admittedly remote, would be a se lective reabsorption of potassium by the damaged tubules We are not aware that such a mechanism has ever been described. The adrenals do not appear to be implicated because no evidence of adrenal insufficiency, either clinically or on necropsy was found.

We believe that this patient might have survived had his pre carious condition been discovered earlier. An infusion of calcium salts or hypertonic sodium chloride might have prolonged his life until an artificial kidney could have been secured and used

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THE MEDICINE OF TOMORROW

Starting with undergraduate teaching the med cal student must be indoctrinated by example a well as precept to the plamour a d w rm inner satisfact on that comes from ding the chronically ill individual t meet his tot I life needs. He must learn to get an ego glow from tak ing the old hemiplegic out of a wet bed te ching him to walk and to talk to meet the needs of da ly living and to live outs de an institut on and to be a person again. These accomplishment must ere him the s me satisfaction that he now gets fr m making a diagnosis of favism or anthrax

If he does not develop such a feeling of inw id satisfaction much of his professional life will be frustration. Whether he likes it or not the average general practitioner now spends three quarters of his time treating patients who are chronically ill or who hav emotion I problems involving social marital or economic pressures. This percentage will undoubtedly increase continually in the future

When the medic I student or young physics n teaches the point of feeling a deep sense of ccomplishment from his efforts to id the chron c lly ill and disabled then he ceases to be a technician and become a physic n in the true sen e of the word for then he treats people rather than d sea es

-HOWARD RUSK M D a] ml/Chon D as pp 88-89 I 1955

Chromoblastomycosis

Laboratory Observations on the Causative Organism

KARL V KAESS Commander (MC) USN
CHARLES C REBERGER Lieutenant (MC) USNR
PIERCE T SLOSS Lieutenant (MC) USNR

HROMOBLASIOMYCOSIS is a chronic, infectious, apparently noncontagious disease of the skin and subcutaneous
tissue caused by several species of related fungi Al
though the name, chromoblastomycosis, has been accepted by
most authors, the names given the causative organism have not
been uniform Conant and Martin' and Carrion' have discussed
this problem and attempted to clarify the nomenclature The
terminology of Carrion is used here

By 1947 Carrion had collected 159 cases of chromoblastomycosis from the world literature At that time 80 percent were from the tropics or subtropics, and 20 percent were from the temperate zones only nine cases were from the United States By 1954, the twenty second case of chromoblastomycosis had been reported from this country—the last nine from a single area in Louisiana.

Chromoblastom cosis has a slow clinical course and usually involves the skin of the extremities, rarely the skin of the face or trunk and even more rarely the deepor tissues It has been found only in adults and 96 percent of the reported cases are in men Its several clinical types were classified by Pardo Castello and associates into verrucous, tuberculoid, syphiloid, psoriasiform, cicatricial, and elephantiasic forms, according to the gross appearance of the involved skin The species of caus ative organism does not correlate uniformly with any particular clinical form of the disease '

The disease is usually treated surgically Excision or electro coagulation and curettage have been used successfully for many cases '' but the creatrical and elephantiasic forms may require amputation ' Pardo-Castello and associates used roentgen ray therapy (from 600 to 1 200 r u filtered through 2 mm of alu minum) successfully in a few patients with limited involvement lodides, themol,' neoarsphenamine and pentamidine' appear to have little effect.

Yew in a preliminary report indicated regression of numerous lesions in one patient following oral and intravenous sodium iodide, moist copper sulfate compresses and the local application of an ontment containing seven percent chrysarobin five percent salicylic acid and five percent phenol Whether cure was obtained or not was not reported

In recent in vitro studies of the fungistatic activity of various chemicals Bocobo and associates found that certain diamidines in concentrations of from 10 to 100 µg per ml of culture medium inhibited the growth of Hormodendrum pedroso: (Fonsecaea pedrosoi) and Phialophora vernuosas

CASE REPORT

A 36-year old boiler tender in 1947 while in Italy noticed for the first time a round reddened scaling painle's area about one centimeter in diameter involving the skin just above the posterior asp ct of the left elbow. The lesion gradually enlarged until at the time of his ad mission to this hospital on 26 April 1954 it measured 10 by 7.8 cm (fig. 1) During the p tient's 17 years of service in the Navy he had visited many ports. He was in China and the Philippines from 1937 to 1940 he made several stays in Cuba from 1942 to 1944 and he visited numerous South Pac fic islands from 1944 to 1945. He was unabl to recall an njury to the involved area of skin at my time during his nivel service.

The les on (f g 1) was a raised erythematous slightly acaly well demarcated irregular plaque with an elevated border Scattered area of nonelevated notmal appearing skin mea uring from five to eight mill meters in d m ter were present within the borders of the involved area and other physical and laboratory examination findings were within normal limits

A small piece of skin from the edge of the involved area was excised on 18 hay 1954 for microtechnical processing and mycologic and bacteriologic examination

Histologic Ex mination Microscopic examination of sections of the spec men of skin pesented varying degree of irregular acanthosis broadening deepeni g and distortion of the rete pegs. In hyper ker tosis of the epidernis. The immediately underlying d rims was involved by a one eati g granulom in which lymphocytes e pthelioid cells. Langhans giant cells and nests of neutrophils were abund it (fig. 2). The deepe derm is was not involved in this process. Scattered through the in ole dit sissue a doccasionally present within the giant cells were small numbers of bownish spherical to slightly ov. I thick walled occasionally separtie bodies measuring from six to 18 riccons in diameter (f.g. 3). These were visible in u is ined prepir tions as well as in heri to yline-osin tained sections and they stained with flochsin using the periodate-S h ff reagent.

Mycologic Examination Culture of a portion of the biopsy specimen on beef extract blood agar Littman s oxgall agar and on Sabouraud s agar produced growths typical of F pedrosor variety communis (fig 4)



Figure 1 Appea ance of patents left elbow on hs admission to the hospital

Fermentation studies were carried out on this organism using the following sugars dextrose levulose galactose maltose sucrose lactose and mannitol

No gas was produced in any of the sugars used No acid was produced in lactose or mannitol. Acid was produced however in dextrose galactose sucrose levulose and maltose

Animal Inoculation Twelve white male mice and six white female rabbits were inoculated with a two percent weight in volume suspension in physiologic saline solution utilizing a 14-day old subculture from a primary isolate on Sabouraud's dextrose agar. One half of the mice and rabbits were injected subcutaneously with viable material and the rest with autoclaved material all animals were sacrificed after eight weeks. Histologically the mice showed abscess cavities filled with cellular debris brownish fragmented hyphal elements and small (four

to six microns in diameter) spores together with macroph ges and polymorphonucleocytes. There was no evidence of a granuloma Cultures of this material from the animals who received the viable inoculum yielded heavy growths of the organism under study. Cultures from the mice receiving the autoclaved inoculum were negative. Five of the six rab bits were negative on gross inspect on and on histologic and mycologic bits were negative on gross inspect on and on histologic and mycologic



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examination One of the rabb ts had been given 0.1 ml of the v ble material intradermally it developed palpable nodule which h stologically appeared simil r to the abscess cavities seen in the mice Culture of this abscess was night very

Diamidine Sensitivity In vew of the reported evidence that certs in diamidines exert an inh bitor; influ nce on the growth of the caus tive mold of chromoblastomycosis t wa decided to test the effect in vitro of one of these agents namely propain dine against the subject organism.

Consequently graded amounts of the isethionate salt of propamidine dissolved in water were incorporated into Sabouraud's dextrose agar at a temperature of 45° C and pour plates were made. The following concentrations of propamidine were prepared in duplicate sets of plates 0.5 1 2.5 and 10 μg per ml. of culture medium. In addition the solvent (water) was added to the contents of each of one set of plates in amounts equal to that used to dissolve the propamidine added to each of the other pour plates. The surface of each plate was inocu

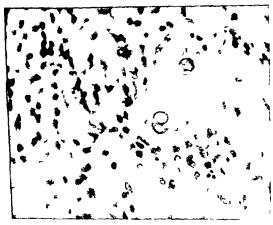


Figure 3 Section of tissue showing Langbans type giant cell with included tissue phase of the causative organism (×740)

lated with 0.3 ml of a five percent emulsion weight in volume in physical cologic saline solution of the mycelial phase of the test organism. The plates were kept at room temperature and inspected every other day for three weeks.

At the end of one week there was heavy confluent growth on the plates containing the solvent and those containing 0.5 and one microgram per ml of propamidine. Slight growth in the form of a few minute colonies was evident at the two micrograms per ml concentration of propamidine. No growth was discerned at the higher concentrations. There was no change in the appearance of the plates at the end of two more weeks.

Bacteriologic Examination Cultures of the second biopsy specimen were negative for brucella actionogices and nocardia A guinea pig inoculation was negative for tuberculosis or other infectious disease.



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Treatment Bocobo and associates found inhibition in vitro of H stilbesterol or methyltestosterone per ml of culture medium Do ages required to accompli h this concentration in body fluids would be expect d to produce prom ent undestrable hormonal effect

The diamidines were found by Bocobo and associates to inhibit growth of their strains in a concentration of 0.01 mg per ml in the case of still mid ne 0.1 mg per ml in the case of pitamidine and 0.1 mg per ml in the case of propamidine.

In our organism propamidine caused inhibition of growth in a concentration of 0 005 mg per ml of culture media showing therefore

considerably greater sensitivity to propamidine than the strain used by Bocobo

Because of the expense of the drug and the size and location of the lesion surgical excision plus a skin graft was considered to be the treatment of choice in this case

We believe however that chemotherapy may have a real place in the treatment of chromoblastomycosis where the lesions are multiple or too extensive to lend themselves to excision and grafting Sensitivity studies are worth while if chemotherapy is to be considered. In our patient propamidine probably would have been the drug of choice if the lesion had been less amenable to surgery.

DISCUSSION

Chromoblastomycosis apparently is caused, in the majority of cases, by accidental inoculation of the skin with the causative fungus. That the disease may be produced by cutaneous inoculation was demonstrated by Azulay, "who introduced, by scar ification, two drops of a saline suspension of the organism into the skin of a volunteer human being. In three months the volunteer had developed a progressively enlarging lesion 15 cm in diameter which, over a year's time, became vertucous

Animal inoculation has been carried out in the case of rats, mice, rabbits, dogs, monkeys, guinea pigs, pigeons, and frogs with apparent success in all but the last two 2 Rats and mice are reported to be most susceptible by the peritoneal, subcu taneous, and testicular routes 2 Azulay reported production of granulomas by the testicular route in guinea pigs and rats. but. in his hands, the subcutaneous and peritoneal routes were un successful 10 We also were unable to produce the disease in female rabbits by cutaneous or subcutaneous routes or in male mice by subcutaneous injection It is of interest that Conant and Martin injecting three series of live suspensions of four strains of fungi causing chromoblastomy cosis subcutaneously into rabbits, produced circulating antibodies and reactive nodules but did not produce the disease As shown from our own work. the organism may be isolated for a short period from the site of moculation This we do not regard as proof of disease production but rather as a demonstration of the hardiness of the fungus We are further impressed by the similarity of the lesions produced by injection of sterile control suspensions to those produced by suspensions of the living organism

Fermentation studies by de Montemayor¹¹ were performed on six strains of fungi causing chromoblastomycosis as well as strains of several other fungi He found that organisms causing chromoblastomycosis grew best at 37 C and produced acid in glucose maltose sucrose and galactose but not in lactose Our fermentation studies are in agreement

Serologic studies to determine antibodies against this organism were not carried out

SUMMARY

A 36 year old man had chromoblastomycosis of the skin of the left elbow since 1947 Histologically the involved skin was the site of granulomatous inflammation and contained brownish spherical septate bodies Fonsecaea pedroso; was isolated from an emulsion of the diseased skin Attempts to produce the disease by cutaneous and subcutaneous injection of a saline suspension of the organism into rabbits and by subcutaneous injection into mice were unsuccessful. The organism produced acid without gas in devtrose galactose maltose sucrose and levulose but not in lactose or mannitol. In vitro sensitivity studies were done using propamidine and growth of the fungus was found to be inhibited by a concentration of 0 005 mg per ml of culture medium by this agent. The patient was treated by surgical excision of the lesion followed by the application of a split-skin graft.

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Epidermoid Cyst of the Testis

JACK G OLSEN Captain, MC USAR VICTOR O CALDERIN Captain, MC USAR

BENIGN testicular tumors have been regarded as rare Herbut's stated that they constitute from two to four percent of all testicular neoplasms Mostofi however stated that testicular epidermoid cysts are more common than was previously thought. He had observed a yearly average of two or three patients with this lesion.

Testicular tissue, being totipotential, gives rise to a variety of neoplasms. The inciting agents are unknown in the case here reported, a history of recurrent urinary infection was obtained infection, therefore, might have played a part in the pathogenesis of this cyst. Either metaplasis of the testicular epithelium or development of so-called cell rests has been as sumed to explain the occurrence of tumors of the testis Nagel and Polley, have presented an interesting discussion of the pathogenesis of testicular dermoids epidermoid cysts are generally considered a variant of this neoplasm.

The clinical problem in managing testicular masses is differ entiating the malignant from the benign before removal Because most are malignant, total orchiectomy should be done in doubtful instances. In the cases reported by Cook and kimbrough differ entiation was made by palpation of the surgically exposed testis

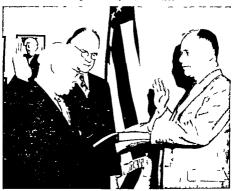
CASE REPORT

A 22 year old man was admitted to this hospital for study on 24 February 1954. Two weeks before admission he had noted a swelling in his right testicle followed by pain some time later. He also stated that albumin had been found in his urine previously. The remainder of the history was negative except for repeated episodes of simusitis and urinary infection in the past. On first percussion he had bilaterial tenderness ower the kidneys. There was an indurated localized tender mass about one centimeter in its greatest diameter on the laterial aspect of the right epididymis midway between the epididy mail head and tail.

Results of blood studies including an erythrocyte sedimentation rate and serologic test for syphilis and of a urinallysis were normal A roentgenogram of the chest and an intravenous urogram showed

DR EDWARD H CUSHING, NAVAL RESERVE OFFICER NAMED DEPUTY TO DR BERRY

A Washington D C physician with Army service in World War I and naval service in World War II is the first Deputy Assistant Secretary of Defense (Health and Medical) Dr Edward H Cushing who has been a c ptain in the Medical Corps U S Naval Reserve since 1940 took the oath of office in a Pentagon ceremony on 3 March 1955



D Edw d H Cush ng right how b g sworn a Deputy to D Fank B B rry c ter A i tant Secretary of D f (H alth and M d l) by I b E. Moor OSD Dire tor of P mm 1

For th p st four years Dr Cushing ha served in important Govern ment posts. He i a former member of the National Research Council and has held faculty ppointments at Western Reserve and George Washington Unive ities

When Dr Cushing assumed hi new duties Colon I Sheldon S Brownton USAF (MC) formerly executive assistant to Dr. Berry was elevated to dir cror for planning and liai on in the Office f the As sistant Secretary of Defense (Health and Medic 1)

PROGRAM OF A M A MILITARY MEDICINE SECTION, 7 9 JUNE

Scientific subjects of primary military importance but of in terest to civilian physicians as well are scheduled for discussion by both civilian and military medical authorities at the annual meeting of the American Medical Association in Atlantic City, 6 10 June The subjects to be presented at the Section on Military Medicine include handicaps and motivation, automobile accidents, effects of fallout radiation the effect on the public of breaking the sound barrier use of whole blood in military and civil defense emergency, psychological reactions in mass casualties and modern concepts in the treatment of burns

The charman of this section is Major General I S Ravdin, member of the Civilian Health and Medical Advisory Council to the Assistant Secretary of Defense (Health and Medical) and John Rhea Barton Professor of Surgery, University of Pennsylvania Colonel Charles L Leedham MC, USA is concluding his second year as secretary

Meetings of the section will be held on the afternoons of 7 8, and 9 June Point credits for retention and retirement may be earned by all eligible reserve Medical Corps officers of the Army Navy, and Air Force on inactive duty who attend the sessions

Following is a complete program of the presentations to be made before the section

Tuesday 7 June

The C vil an Docto and Our Future Security—Maj Gen Isidor S Ravdin MC USAR (Ret) University of Pennsylvania Philadelphia Pa

Uremia l ke Symptoms Not Due to U emia in Battle Casualties.—Maj William H Meroney MC USA Army Medical Service Graduate School Washington D C

Acute Coronary Insuff ciency Appl cation to M litary Med cine—Arthur M Master M D Columbia University Harry L Jaffe M D and Leonard E Field M D New York N Y

Hand caps M tivation and the Pe formance of Duty-Col Lucio E Gatto USAF (MC) Sampson Au Force Base N Y

Acute Infectious Hepatitis in the Armed Fo ces The Advantages of Ad Lib Bed Rest a d Early Reco ditioning—Capt Thomas C Chalmers MC USAR Army Medical Service Graduate School Washington D C William

E Reynolds M D Chal S D vidso M D B t M Lt C mdr E Reynolds MD Clast V SN V 18 Spiral P tsmo th V Joaquin G C gerroa M D Laredo Te N rman D M D N w Yok Robert W Resife te M D Syracu N Y ad Cliff dw Smith M D H es Ill

Ppt Ulce AM j Pobl m Mltry Mdci - Jha H Willard M D U tity of Pen sylva ia Graduat School f Med ein Phil d lph P

Wednesday 8 June

Cab dLv NdC KIIM SIA Th G ?--Col D n S W g USAF (MC) Off f the Surge n G eral D pa tm nt f th Ar For W hingt D C

p f H m B g A deni lly Expo dt Sgn f t F ll t R d at — C mdt R bet A Conad J (MC) USN N ton l N val M d c l C ter nd Lt N R phael Sh Ima (MC) USN N 1 M dc I R ee rch In trut B th d Md C md E ge e P Cronkit (MC) USNR a d Lt Victor P B d (MC) USNR Bookh e N ti l L b tory L g I la d N Y d Lt Richa d S F tt (MC) USNR Ch cag Ill

Th C a d E acuat of V t m R f g — C mdt J l s M Amb son (MC) USN N t l N val M d cal S h l B th d Md

Bekgth S dBm dIt Eff t th Pbl —Cl Jh M Tlb t USAF (MC) A R b dD 1 pm t C mma d B ltim Md

Rpto/tb O/f ftb A tant Stry/Df —Frank B Bry
M D A it t S tary of Df s (H lth d M d I) W h gt
D C

Thursday 9 June

Con pt of th P o d U | Wh I Blood Mirry d C I
D | Em g cy—Lt C I William H C by J MC USA d Lt Col
J ph H Ak oyd MSC USAR A my M d cal S rv Grad t S ho I
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g ment of I j ri t the Thorx-B Blad s M.D. Ge g W h gt U ity School f M d i W sh gton D C

M Ca It — Cap Elm L Ca y (MC) Pyblg al R 1 USN (Ret) M d l College f Alabama B mi gh m Al

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ERRATUM

D t typ graph o C mm nd Th ma D Gil (DC) USNR w list d (MC) he M h 1955 pg 346, fth 1 m l

PROMOTIONS OF OFFICERS

The following officers of the military medical services on active duty in the Army, Navy, and Air Force have recently received temporary promotions to the rank indicated

Medical Corps

Leo H Al ande Lt Comd Syd ha B Al x d Lt Comdr USN Harry C. Alfred, Mas. USAF Phard C. Am LA Co dr USN H ld C And s on Ls Cometr USA Fred nick P Asbury La Cometr USN Bruce F B ah Lt Cometr USV Edgat P Ba g, Lt Cometr USA Ira M B r h Capt USAF Jhn L B skin Li Cord USN Wit J B ge J Maj USAF Howad F Plekb: Lt Comdr USN Albert L Bl ke, Sr Capt 1/SAF H try Bo two gh Lt. Comdr USN Ang s L Benn t Lt Comdr USV B nismin H Brown Capt. USAF C let n J Bown, Lt Comd USN R ben L B rd k Lt Comdr USN Charl 5 J B mh m, Lt Comdr USN H my T C ha, Maj USAF Rih rd k C Ch g, Capt. USAF Grah m M Coffm Lt. Comdr USN H rold N Cogbum Lt Comd USN Edwid L Cole J It. Comd USN H gh S Colq 1st Le. Comdr USN R hard B C nn Lt Cord M nc E Cowy Lt. Coxfr USN G 18 A. Co Lt Corner USN Ih F Cotn m Maj USAF G g D n It Cord USN T dot B C. Dav s, Lt Comdr USN The ma C. Deas, Lt Comd USN Will m E. D ; h Capt USAF Jm sP Da Lt Comd USN Ra h ed F Dobbin Lt Comde USN Adran Dak rt Capt USAF Robe t O Dubpem II Lt. Comdr USA Srua t R. Ducker J I.L. Co dr USN Ad lph W Dun Lt Corndr USN] ss Edward Lt Comdr USN LI Comd USV Ervi Ell J hn C Es wein Le Comde USN Will m J Fagan Lt. Comdr USN Ir L F th Jr Lt Comdr USY Larry L Feder Capt USAF R chard H F rguson May USAF R bert R Fif Capt. USAF Marti E. Fl ps J Lt Cond USN

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Medical Corps-Continued

Ch. d. I Mola r. I Lt. Comeb USN William G. Murr y L. Comb USN R b dL M rd d, Capt USAF M rvin J N man Lt. Comd USN RhdDN m Lt Comdr USN R ben A. N ly I L C md USN R ben L N 1 Lt. Comdr USN We dilk N kil Capt USAF Jm BN Lt Cmd USN Swrit Nun Capt USAF M 10 J ON ill Lt Cmd USN Roy T P tk Lt C md USN M tth w M. P tt Lt. Comb USV FdnkLPICH USAF I hn S. P ra d zi Lt Comd USA Hary WP this Lt. C matr USN
J b H Pi d Capt USAF Fr S. 1 R dl ld, Lt Comd USN Will m C. R mb, J Copt LSAF R bert E R Li C md USN G g H R l y Lt. C d USN P l R zo Lt. Comd USN Hary L. Rb n LL Comd USA Im S. R bert Lt Comatr USN Ch I E P s rs Lt Cord USN All dFR th LL Comd USN R ben E. R w d 1.1 Comdr USN R be L Rud lph May USAF F d kK S bmidt, LL Comd USN R & D Sc Capt USAF

J m P S mm L1. Comdt USN PulO Shak If rd Lt. Cometr USV R b W Shap J Lt Comd USN Da ISSm LL Comdr USV Cody L South Capt USAF H m L Smith C pt. USAF M rsh H. Smith Li Co dr USN Ray M Sm th Capt. USAF Illiam R Sm th Lt Combr USN J L Spa Maj USAF R E Sw Lt Comb USN G g W T yl J L1 C md USN R lph J Th p J Capt USAF R b n G Th mp n, Col USA 1 P T ah, Lt Cometr USN F dAVI k Lt Condr USN 1 b W Van Capt USAF Ge g T Van P te Lt Comdr USA Phil p H & Iker Lt. Comb USA R bert O W d Cape USAF
B m d] W infu m Li Comdr USN Ih F W 1 Capt USAF Rhdwl Capt USAF R betD Whiy Capt. USAF B vedy H Wh Lt Cometr USA H man A Wh J Capt USAF J A W CoL USA K P Willim Capt. USAF Sydn T Wtb. Lt. Cordr USN Do ald E. & blrabe Capt USAF

Dental Coms

Arthur P Adl Capt USAF V A 11 Capt USAF Henry . And so Capt USAP R be A, And Lt. Combr USN
Flw d R B mh Lt Combr USN Riph 4 Bhp Lt Comdr USN Do ld R. B own Capt USAF R bert G B It 14 Cometr USN I sho Chd ke LL C met USN M rvin Carm 11 Condr USN David V Ca J Lt. Corde USN Am W Ca J Lt. Cord USN Ch d B F m ll I ... Capt USAF K nn th 15 Cill v Lt. Comeb 1/5N (rald S. God Capt USAF
] h P (ad Lt Comeb USA H m L H II Lt C mdr USN R bent V II s, Capt USAF Seymour I fl a La Comst USV Iam L Jor s, Capt USAF Grald J K Capt. USAF

CII M K ey LL Comdr USN M um G.Kl Lt Co et USN
P be J L w LL Co d USN L wire K L w Li Comstr USV P IK M IN II Capt, USAF GI H M Ge IA C dr USN M to Mo m to LL Comd USN J m E M on Li Corner USN
K th R M Catt USAF
J my N vak Li. Col. USAF Gridon H Ro I tad Li Comd USV M rvin H Sc tt Lt Corner 1/5N R bert W Sm h, Capt USAF I L Comdr USN from 1 B Ito S. S phen Capt USAF TI YT to Lt Combr LSN Jb JT to Maj USAF FITT # LLC met USN V I C. Van Cl ve Capt USAF JyK T Capt. USAF Carl L Th le, Lt C mb, USN

Medical Service Corps

Albert V Alder Capt. USAF William F B Ler Capt USAF Le ter C Berna d Capt USAF Cart r G Brooks Lt Comdt USN Charl s E Curt s Lt Comdr USA H rold G Don a 11 Comdr USN Jhn J D gan Capt USAF Clint n I' D t h Lt. Corst USN Ben F Fdington Jr., Lt Comd USN Manie J E ell Capt USAF Scott M F kl Maj USAF lam P Fom L Capt USAF Ru ell R F w 11 Cordr USN Ch rl H F g rt, Lt Comb USN H II E Gray Capt USAF I an B Gr m Capt USAF G g M H d k Capt USAF Da 1 F H Lt Comdr USN R bertann B Huff, Capt USAF

Will am B Hull Lt Comety USN L wrence N I d mede Capt USAF Woodrow W J naings Capt USAF Euge e V Kad w Lt. Comb USN Jo ph E keyes Maj USAF Arthur N King, Lt Comdr USN Richad A Kig J Capt USAF Lorn P & kland It Comdr USN H nry C Liford, Capt USAF Kenn th H L g May USAF R ssell S. N Lt. Comdr USN 1 b 1 Sarsfi ld. Lt. Comdr USN J ck M Sh ley Lt. Comdr USA PulScmle Maj USAF Ce I D Tayl Capt USAF Lest K Th mp on Lt Comdr USN W odrow T k Capt. USe F Whif Vn Capt USAF E L V n L d ngh m Lt Comdr USN

Nurse Coms

B rtha I Alvo d, Lt Comdr USN L vo ne R Audette Capt USAF Virgini C B Iden Li Cometr USA M g ry E B tz ld Capt USAF R th A Brown Lt Correl USN M ry A Ch nbe lin Capt USAF D a M Cic Capt U AF M ry M Ci k Capt USAF A dry B Coch Capt USAF M ga t J Cole Capt USAF Dorothy E Colli s, Isi II USAF
G 1 W Comb Capt USAF
Ch tlott R, F t w Capt USAF Mutam E F lim n Ist Lt USAF Delus E. Fl h my Capt USAF Ethel L Ginn Capt USAF Eleanor F Grav II Capt USAF
J ette Greyd nus Capt USAF Mary] G ffin Capt. USAF Syl R H He Ist Lt USAF AdyE Han Capt USAF Eli bett h H m ss, Capt USAF M na B J mes Capt. USAF
St II V J the Capt. USAF
D ph na J 3 s Capt USAF
Cl dys A K lisch Capt USAF Irene J k r ka Capt USAF

BelG Kl Capt US.F M m: R Kl e Capt USAF M rtha M L pin Lt. Comd USA Vera M Lo gbottom, Capt USAF J phi A. M t to Capt. IISAF P tuc a A. Mart e Capt USAF B thyl S. Ma tin Capt USAF M ga t R. M Grego Capt USAF Patri i A McMa Catt USAF Eln C. Mess t I t Comdr USN Ro li Mort on Capt USAF Catheri LON II Capt USAF D rothy A. P my Capt USAF N acy A Pp Capt USAF

J P Sal dre Capt USAF J nF Set E Ist Lt USAF R th M Sh w Capt. USAF Gl S. Stewart Capt USAF Fran s J T th Capt IJSAF N da M. Ver ch Capt. IJSAF Mary E. Wall c Capt USAF Ell E Welborn Capt USAF Dorothy G W st Capt., USAF Marjon E Whit Capt USAF M ry E Williams 1st Lt USAF Dot s G Wint ts Catt USAF Wa da M Wollert Capt USAF

Women a Medical Specialist Corps

M ily J And so Capi USA Id J Co sin 1st Lt USAF B tty L E J hnson Capi USAF

Hrret S.L. Col USA Ern un N. uhardt Ist Lt USAF Agn s.P. S. yder Lt Col USA

NEW N R C ARMY EDUCATION COMMITTEE VISITS SAN ANTONIO ON FIRST FIELD TRIP

On its first field trip the new Army Medical Education Committee of the National Research Council recently inspected the training facilities of the Brooke Army Medical Center in San Antonio Tex This month the group will visit William Beaumont and Fitzsimons Army Hospitals



Lie t na t Clon I H. H. kell Ziperma MC USA d'mon trale q pm s us d'amoble Amy usgal bopital t (fr m left) Dr G t Taylor D'an and P | sor | P diatrics U ver ity | Texa Postgrad at School | M disc Dr D A. Clark, Super tende t Massab tt G I II s-ptal, Dr J eph M H yman, D and Profe or of M discin T ft Coll ge M discal Scho I D Fankl C. M L. P fssor Eme t of Physology U w ity of Chic go, Dr Gaylord W Ander Dr tor d M y P f so U wer ty of M of Shool of P blic H lib Dr Thoma B adl y st | memb N tional Academy | Scs ces, D Philip Own, S creta y D 1550 | M dic N 1 nal R arch Co il a d D Hort R g A ista t Surgery II road M dical S bool

The committee of well known medical educators replaces the former Advisory Committee of the Army Medical Service Graduate School Instead of being limited to the scope of oper tions of the school at will deal with professional education and training problems of the Army Medi cal Service in its entirety and will act in an advisory capacity to the Surgeon General

Dr Dean A Clark Boston is chairman of the committee and Dr Thomas Bradley W shington D C is executive secretary

A MESSAGE FROM THE A M A

The Commission on Organization of the Executive Branch of the Government (Hoover Commission), in one of its recent reports to the Congress, said that Federal medical services cost \$4 149 000 000 in 1954 including over \$2 billion in disability allowances—and a great deal of waste which could be prevented in case this is not readily comprehended the studies show that today the Federal government has undertaken specific responsibility for all or part of the medical care of 30 million people, roughly about one out of every five persons in the United States The Commission's studies indicate that little fundamental improvement in Federal medical services has been made since March 1949 when it conducted a similar study and made a report to the Congress

It is not surprising to learn that three government agencies—the Veterans Administration the Department of Defense, and the Department of Health Education, and Welfare—together account for over 90 percent of the total Federal expenditures for health activities or that the Veterans Administration alone accounts for over 60 percent of these total costs Nevertheless, the report points out that by restricting medical services and disability payments to those veterans properly entitled to them, the government could save \$330 million a year

Since 1949 the number of civilian veterans has been increasing at the rate of almost one million per year. They now number 21 million Therein lies the politics which anathematize a realistic and practical solution to that part of the problem.

A careful analysis of this report clearly reveals that two seg ments of our population have been given undivided and abundant medical service to such an extent that it is apily referred to in the report as "chaos" and huge wastes " What has been and is being done about national survival for the rest of our population? What does the report say about the medical aspects of civil defense preparedness?

Unfortunately this 76-page report devotes only 17 lines to health planning for total war. The present status of medical planning for civil defense is described in the first two sentences of that portion of the report which says, "Our task force is particularly disturbed by the absence of a complete medical plan for

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Editor

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Reviews of Recent Books

SURGERY OF THE HEART by Charles P Bailey M D 1 062 pages 1 452 illustrations on 671 figures and 3 plates in color Lea & Febiger Phila delphia Pa 1955 Price \$25

This is the first publication that brings together under one cover a comprehensive and detailed study of surgery of the heart. The material presented is based largely upon the authors own experience in the field of cardiac surgery an experience which in volume is probably unequaled in the world today. For this reason alone, the book immediately becomes an invaluable contribution to surgery. It is written primarily for surgeons but internists cardiologists and pediatricians could greatly benefit by including it in their selective reading. Practicing physicians and undergraduates can find helpful information in regard to modern concepts of surgical treatment of heart disease.

The book begins with a brief but delightful resume of the development of cardiac surgery including transient visions of future developments in this field There follow essentially three compartments. The first six chapters contain enlightening discussions of general interest including anesthesia hypothermia exploratory cardiotomy the heart lung machine and cardiac resuscitation. The remainder of the book is divided into surgery of congenital heart disease and of acquired heart disease. On congenital heart disease, all well established procedures are given as well as some revolutionary methods of correction of the more complicated anomalies. Some of these are vet in develop mental stages and are obviously subject to acute critical analysis in the light of future experience. Particular reference is made to the ingenious but complicated two stage method for correction of trans position of the great vessels. The section on surgery of the mitral valve is the most complete available and is highly recommended for those whose experience is minimal

All topics are attended by considerable interesting historical back ground and the author draws heavily and accurately from medical literature. The bibliography is extensive and valuable as a source of reference material. The index is brief and is inadequate for location of other than major topics of interest. This book is highly recommended as a reference for those in any way interested in cardiac surgery.

-LUTHER G BELL Capt (MC) USN

BIOCHEMICAL DETERMINANTS OF MICROBIAL DISEASES by Rene J Dubos 152 pages Harvard University Press Cambridge Mass 1954 Price 33 50

This book is a welcome addition to the list of Harvard University monographs in medicine and public health. It is composed of a series

of e says dealing with the biochemical f ctors which influence the ability of microbi l gents to proliferate and to cause disease. The author points out that although infect on is commonplace only a small percentage of inf cted ind viduals devel p sympt ms or pathological le ions His e ays delve i to the reasons for this with emphasis on the p opert e of the infected ho t that determ ne the course and out come of the infect in

The effects of tissues body fluids ph gocytes and their biochemi cal constituent on m cro-organisms n vivo are considered In addition the toxic effects of infecti ns including the Shwartzman phenomena and the Arthus eaction re analyzed There is an interesting an lysis of the type of mmun ty which exists in the absence of detectable pro tective antibodies

The material has bee gathe ed fr m a large number of sources a d is organized uperbly The bo k is well written and stimulating to read There are nume ous tables illustrating the effects f various sub tances on growth and toxic ty of m ero rganisms and a complete biography Th f mat s excellent and adds con iderably to the vol ume read bility -EUGENE V IOBE Capt (MC) USN

RENAL FUNCTION dtdbySt IyE B dIy M D 218 pge littstd Sp dbyJ ih M y J F undt N w Y k N Y 1954 P tdbyC 1 M y &C I c N w Y k N Y P

This book which presents the tr asactions of a conference is org a ized into sections on the nephrotic syndrome k dney transpl neation and acute renal f ilure A formal present tion on each topic furnish s a point of departure for w de r nging and lively di cussion by the other experts present Inf rmality is well preserved so that the re d r may particip te vicariously in the Rive and take. In the process also pre served are some ambiguities and non sequiturs

The book begins with a discussion of the sodium retaining adrenal corticoid found in the urine of patients with nephrotic syndrome or other edema st tes. The nature and definition of nephrosis its re lation (if any) to glomerulonephritis the relation of glomerular filtration rate to sodium excretion and the validity of creatinine and inulin clear ances in disease are briefly discus ed followed by a summary of exper ence on treatment of the nephrotic syndrome with ACTH and adrenal steroid

Because me ger literature is available on kidney transplantation in man the second section i esp ci lly valuable in presenting an interesting prelimin ry report on the oper tion in 10 patients. Although the results in none of these were finally successful the responses in two patients give encouragement to continued study. One achieved an unusual degree of f netion though tran ient and the other an ex ceptional survival (f ve nd one half months) of the r nsplanted kidney

The last section concerns renal pathophysiology in acute tubular necrosis. The composition of the urine is said to suggest that there is an osmotic diuresis per nephron "though proof appears impossible. The replacement of sodium chloride and water during the diuretic phase is a controversial subject evoking much speculation about mechanisms of the regulation of body volume, composition and osmotic pressure. Other subjects mentioned include the role of infection in the disease the use of hemodialysis and experiences with various dietary and intravenous feeding regimens in treatment.

This book should appeal particularly to the clinical investigator interested in renal and fluid and electrolyte physiology ——VARION E. MEDÜRELL. Mar. MC. USA

THE CONCEPT OF SCHIZOPHRENIA by W F McAuley M D 145 p ges
Philosophical Library New York N Y 1954 Price \$3 75

This book by its small size and restriction to a single entity appeals to student teacher and busy practitioner One is quickly impressed by its readability clarity and conciseness

A brief recital of the concept of mental illness held by ancient phi losophers is followed by a survey of kraeplin s observations which led him to conceive of dementia praecox as an entity Significant contributions of many workers in psychiatry and related fields are presented sequentially so that the concept of schizophrenia comes into clearer focus yet at the same time has its boundaries extended Current thought relative to the role of heredity and environment neurophysiol ogy and metabolism and early diagnosis and treatment are included

In no other single source has the reviewer found the gamut of significant contributions on the subject winnowed abstracted and presented so smoothly objectively and interestingly

EATON W BENNETT Col MC USA

TREPONEMATOSES by T Gutbe M D and R R Willcox M D 79 pages
7 illustrations World Health Organization Palais Des Nations Geneva
Switzerland publisher 1954 Columbia University Press New York
N Y Distributor Price \$ 0.50

This publication is a reprint of a special 1954 number of the Chronicle of the World Health Organization. The authors discuss the changing concepts in the epidemiology and control of the treponematores: syphilis yaws pinta and bejel. Emphasis is placed on nonvenereal syphilis in children and young adults in regions of Europe the Middle East and Africa. This type of endemic syphilis is considered an important problem its incidence depends on return to conditions of poverty over crowding war or a combination of factors.

The symptomatology and serologic relationships of the four trepo nematoses are excellently summarized. Mass use of penicillin is dis cussed and the importance of repository preparations is emphasized 764

The progress of antitreponem toses campaigns of the WHO and UNICEF in various parts of the world is concisely reviewed Emphasis is placed on intern tional co-ordination of research particularly in regard to stand relization of serologic reasents and methods

This paper bound publication has a detailed table of contents is well illustrated with maps tables graphs and photographs and the documentation is adequate At the end of the publication is a good bibliography on treponematoses control although all of the references in this section are from publications of the WHO or affiliated agencies

This publication s of gener l interest but of particular value to public health workers and those engaged in treponematoses problems in the field and laboratory -PAUL A KEENEY C I MC USA

SHOCK AND CIRCULATORY HOMEOSTASIS edited by H 14 D G n, M D 230 pg | 11 t ted Jo 1sh M y J Found t N w York, N Y 1954. P c \$3 50

This book is a report on the Third Conference on Shock and Circu latory Homeostasis and is divided into three separate topics. The first part c vering experiences with hock in the korean conflict was pre sented by Dr John Howard and concerns the problems encountered in the management of shock in seve elv wounded patients at a forward hospital The discus ion that follows gives real insight into the problems of shock following injury. The second part on reflex factors in the regulation of the circulati n was p esented by Dr G S Dawes In the discu ion present day thinking of an important phase of the physi ology of the circulatory syst m is outlined. The last part covers func tional properties of blood vessels presented by Dr Robert Alexander The gueries by various members of the Conference bring out the concepts of the mechanical properties of the vascular bed

The book 1 well indexed and contain excellent references at the end of each section. It is recommended for physicians interested in physiology and persons carrying out investigative studies in the field of circulatory dynam cs It is fascin ting reading revealing the con cepts of var ous experienced research workers who freely discu s the topics involved -CURTIS P ARTZ LL Col MC USA

TEXTBOOK OF PEDIATRICS edited by W Id E. N I 1581 pg s ll t t d W B Sa der Co Phil delphi Pa. 1954

This book is a continuation of the Griffith-Mitchell and Mitchell Nelson series of textbooks of pediatr cs. The sixth edition now right fully becomes Nelson s T xtbook of Pediat cs

The editor s first desire was to make the text as representative of current pediatric thought and practice as possible. To accomplish this many sections hav been completely rewritten and many others largely so also several new ones have been added With the collaboration of 70 contributors the editor has been eminently successful in making this text up to date. It will certainly retain its place as a standard pediatric reference in the English speaking countries.

This edition although slightly shorter than the last contains many added practical features such as completely revised chapters on drug therapy tumors and neoplasms preventive pediatrics and the administration of parenteral fluids. One would be hard put to find any aspect of pediatrics in its broadest sense not satisfactorily covered. The style, although the product of many contributors is with very few exceptions extremely lucid. There are more than 400 helpful illustrations. 20 of which are in color. The typography and format are of the highest order.

This book is enthusiastically recommended to anyone interested in the medical care of children In my opinion an effective and practical answer to almost any pediatric problem that might face the medical student or practitioner will be found in this textbook

—THOMASE CONE Jr Corndr (MC) USN

THE MICROPHYSICAL WORLD by Will am Wilson Ph D D Sc 216 pages illu trated. Philosophical Library Inc. New York N Y 1954 Price \$375

This very readable small volume on the general topic of the physical sciences is written especially for the layman. It is not considered suit able for reference material because numerous topics are discussed too briefly for rigorous complete treatment of data although sufficiently to give the reader an understanding of the relationship among a variety of topics such as spectra and spectroscopy x rays radioactivity and many similar subjects relating to atoms and molecules. Considerable attention is given to historical development of certain phases of the topics as well as modern theory.

The book is of convenient coat pocket size consisting of 13 chapters a short bibliography and an adequate index. It contains comparatively few illustrations and graphs and no actual photographs. The equations used to develop a final equation are well described.

-ROY D MAXWELL Col MSC USA

THE THEMATIC APPERCEPTION TEST AND THE CHILDREN'S APPER CEPTION TEST IN CLINICAL USE by Leopold Bellak M D 282 page illustrated Grune & Stratton Inc New York N Y 1954 Price \$6.75

In the author's words "this book is meant primarily to be of practical use to the student and practitioner of clinical psychology and psychiatry. While it offers many specific suggestions for improving the use of the thematic apperception test (TAT) it does not present a detailed scoring system. The approach is that of presenting a theoretical framework which will assist the clinician in making analytically meaningful interpretations of TAT responses. About half of the book is devoted to the children's apperception test.

In a theoretical chapter the author discusses the ego psychologic theory of projective technics the apperceptive distortion theory con cerning content of responses and the basic assumptions for diagnostic inferences from the TAT Several chapters concern the use of the TAT including a brief discus ion of 20 different methods of scoring and several case illustrations and its application in psychotherapy

766

The children's apperception test (CAT) is a direct descendant of TAT and is designed for use with children from three to 10 years old Animals rather than persons are used in the stimulus pictures. The CAT supplement (CATS) wa designed to supply pictures for use in special situations. The theoretical framework presented for the TAT is considered to be basically valid for the CAT and the CAT S The analysis and interpretation of the CAT is considered in detail with a rabulation scheme presented for each separate card

This book which is based on extensive of nical and academic ex perience is recommended to all users of projective tests. It is read able and the material is organized for ready reference. Technical t rms nd concept are defined as introduced

-- ANTHONY C TUCKER C 1 MSC USA

THEORY AND PRACTICE OF CROWN AND BRIDGE PROSTHESIS by St. 1 v D Tylma D D S M S 3d dti 1 017 pag s 1 364 t t llus tr ton d 9 lo pl t Th C V M by Co St L M 1954

This new edition of a well known text and reference work contains ix chapters and some 200 pages not found in pr vious volumes. It is profusely illustrated and contains e c llent reference listing at the close of each chapter

The new material includes a discussion of the indirect rechnic in crown and bridge construction with emphasis on the use of newer dental materials peculiar to this technic recent progress in the use of cutting instruments and evaluation of newer methods of pulp protection both during and after operative procedures

Several chapters are devoted to a discussion of the physical propertie and the technics of using acrylic resins in crown and bridge prosthesis The closing chipter entitled Oral Rehabilitation contains a well or sented discussion of the factors to be considered when approaching a case of bite opening A thorough study of all anatomic features associated with such procedures is advised and several methods of obtain ng data on rest positions of the mandible are outlined

Riomechanical considerations are stressed throughout the text a feature this reader believes cannot be overemph sized in a work so widely used in the teaching of this complex subject

PSYCHOANALYTIC INTERPRETATION IN RORSCHACH TESTING by Roy Schafer Ph D 446 pages Grune & Stratton Inc New York N Y 1954 Price \$8.75

This book is for the experienced Rorschach tester who possesses an understanding of general analytic theory but the discussion of the nature of the Rorschach response process and the dynamics of the test situation makes it recommended reading for less sophisticated workers. It is divisible into four major parts (1) a consideration of the dynamics of the test situation with emphasis on the tester patient relationship (2) the Rorschach response process as representative of various aspects of the dream simple perception continuum (3) a consideration of content or thematic analysis along with cautions and safeguards to be observed in such interpretations (4) a detailed study of actual Rorschach test responses against the framework of four main mechanisms of defense repression denial projection and the obsessive compulsive syndrome

The original insight displayed by the author recommends the book as indispensable to the Rorschach worker. His rigorous objective and scientific attitude while attempting to advance extremely complex theoretic speculations is most commendable and his introductory emphasis on cautious thematic interpretation should please the most conservative psychologist. If he slights formal analysis and overemphasizes the importance of a psychoanalytic point of view this is understandable because he is attempting to present a particular methodology. However when he uses some interpretations of an obviously naive unskilled and inexperienced tester and implies that these represent the celectic position and then proceeds to belabor the eclectic psychologist with this as his rationale one wonders what has become of the detached scientists.

But if these are serious flaws in an otherwise stimulating and thoughtful publication the final value of this sensitive complex, and creative presentation is worth many times the price of the volume It is easily one of the 10 best books written on the subject of Ror schach testing —WALTER J GLEASON First L MSC USA

ESSENTIALS OF PEDIATRICS by Philip C Jeans M D F Houell Wright
M D and Florence G Blake R N M A 5th edition 808 pages
103 illustrations including 3 color plates J B Lippincott Co Phila
delphia Pa 1954 Price 34 75

This book has been one of the standard texts used in the instruction of student nurses for many years. It is well planned and the style is simple readable and stimulating. The first section on "Orientation" includes an introduction to pediatric nursing and touches on preventive pediatrics. This is followed by Growth Development Care and Guid ance of the Infant and Child. The other unit headings are General Nursing Care. Nursing in the Care of the Sick Infant and Child.

Autrition and Autritional Diseases " These provide a comprehensive coverage of all aspects of pediatric nursing An especially valuable teaching feature is the group of questions of as the authors term them "S tuations for Future Study at the end of each subdivision

The brief discussions on diagnosis and treatment which accompany the descriptions of the various diseases are especially gratifying to a physician They are informative enough so that a nurse can intel ligently follow understand and appreciate the reasons for a doctor s orders but at the same time they will not lead her into the perils of half knowledge or make her into the nurse learned that Osler so deplored in his essay "Nurse and Parient

The index is complete the b bliographies are adequate and the illustrations are of good quality This book is highly recommended for student nurses and nurses who are taking postgraduate courses in pediatrics. The fact th t in the past 20 years it has passed through five edition in itself shows the place the book has earned in the field of pediatric nursing instruction - JOHN F SHAUL Comb (MC) USN

A HISTORY OF MEDICINE in Tw Volum by Ralph H Major M D 1 155
page llis ra d Ch l C Thoma Publi h Springf ld Ill
1954 Pr \$14.50 c.

Five English-language histories of medicine (e ther new or in new editions) have appeared during the last decade and now we have a sixth In his preface the author tells us that he has attempted to were a continuous account of the stream of med cal history punctuated with the names of eminent physicians and that the work is written primatily for the medical student and the medical practitioner in an attempt to interest them in the history of their own profession. The book begins with primitive medicine proceeds through the history of Greece Rome the Middle Ages and the Renaissance and then by centuries down to the present time with a separate excurs on into American medicine of the early nineteemh century Following each charter is a section of bogr phical addenda which gives brief sketches of men not mentioned in the narrative portion of the work, or which gives additional data on those who are mentioned These addenda are generally arr nged chronologically by date of birth

Unfortunately this book can best be described as a rather incomveniently arranged medical b ographic dictionary. Over 2 000 famous physicians are mentioned in half that many pages. Of one man we are told that he wrote a treatise on hellebore and was an advocate of cold baths of another that he was a quarrelsome person and in constant strife with the College of Phy icians. We learn for example that Benjamin "aterhouse (1754-1846) carried on a crus de for vaccination that resulted in his impoverishment resignation from a professorship at Harvard and the loss of much medic I practice but that James Jackson (1777 1867) on the other hand who succeeded Waterhouse at Harvard in 1812 and who was also a crusader for vaccination was a conspicuously successful physician if there is anything else in volved here besides the fact that Jackson was born 20 years after Waterhouse and died 20 years after him to account for their varying degrees of success we are left to speculate as to what the factor may be

The author reminds us that the good physician throughout the ages has felt the urge to impart his knowledge to other members of his profession and the desire to record the lives and deeds of ourstanding physicians. But history involves more than recall it involves an attempt to recreate the past to place ideas in their proper settings to show the development of those ideas as well as to chronicle the fleeting figures who pass across the scene the historical sense as Lionel Trilling says is to be understood as the critical sense. What Dr. Major has produced is not a history but an act of reverence fo which he metrics our respect if not our acclaim.

-FRANK B. ROGERS LI Col MC USA

THE YEAR BOOK OF GENERAL SURGERY (1954 1955 Year Book Series) edited by Evarts A Grabarn M D 500 pages illustrated The Year Book Publishers Inc Chicago III 1954 Price \$6

This book is a representative review of general surgical literature. The majority of articles reviewed and abstracted are of domestic origin however an effort has been made to include the available surgical literature of all countries whose journals were obtainable. This volume is similar to and compares favorably with previous and companion volumes. The abstracts are conveniently a ranged according to subspecialties or anatomic areas such as cardiac surgery the abdomen biliary tract pancreas esophagus and genitourinary system in 33 subsections. A section on anesthesia edited by Stuart C. Cullen. M. D. is added. The volume contains two indexes one for subject material and one for authors.

The author has done well in preparing and compiling abstracts of the best and most representative papers in recent surgical literature. The volume is suitable for use as a quick and ready reference as a guide to determine the trend in recent surgical publications. The reviewer recommends that it be used in this manner rather than as a substitute fo more complete study and reading. The material abstracted is of necessity brief and often misleading to those who have not completely reviewed the literature. For example, on page 372, where the reviewer is reporting the technic for treatment of hiatal herita of the diaphragm there is a statement that sutures should be passed through all layers of the esophagus. Reference to the original article reveals that the author states that sutures should be passed through all layers of the diaphragm. To one who is experienced in performing this type.

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of operative procedure the typographical error is obvious but perhaps not to the inexperienced or one who has not studied the subject completely

Dr Graham is to be congr tulated for accomplishing a gigantic and important task of abstracting and compiling pertinent surgical literature in such a complete convenient and well organized manner His ex cellent literary style illustrations organization and indexes add to its value This book should be available to all surgeons and especial ly to all physicians who need a quick and re dy reference to repre sentative abstracts of articles from the surgical liter ture of the year -ROBERT T GANTS C I MC USA

ESSENTIALS OF REMOVABLE PARTIAL DENTURE PROSTHESIS by OI trati wth 10 l W B Sa d C Ph l d lph

The author has satisfied one of dentistry's pressing needs by pre senting a text which sets forth sound modern concepts in the field of partial denture prosthodontics Commend ble simplicity is obtained through a direct question and answer style and through the generous distribution of carefully selected illustrations. The complete table of contents an abundance of cross references and well organized index make for easy use of the book

Oral examination office and laboratory procedures denture main ten nee and patient education are capably considered. The general pattern followed throughout is to empha ize fundam ntals first a d then poly the pert n nt factors to situations accountered in practice kennedy's cl's ification of partially edentulous mouths is used ad vantageously to place any restoration problem in one of four basic groups. An understanding of characteristic designs that satisfy the requirements of each group is facilitated to make no sible the mastery of denture planning Modification of the primary design to me t indi vidual needs is di cussed Unfortunately numerous editorial errors mar an otherwise skillfully prepared text

-ARTHUR R FRECHETTE Capt (DC) USN

D P H d Warr H S th

The fourth edition of this comprehensive and excellent textbook for college students has been extensively rewritten and brought up to date although the basic organization of the previous edition has been maintained The autho s h ve drawn widely from official and voluntary health agencies for latest statistical data and health information. The greater portion of the volume is given to the part entitled. The Hyg ene of Everyday Life" which concerns physiol gy nd personal hygiene The medical inform tion presented throughout the book is sou d The

material in the five chapters in the section on mental health is very clearly presented and should be easily understood by the average college student. Throughout the work the responsibility of the individual for protecting and promoting his own health as well as the health of others is stressed.

The material is well organized presented in a concise manner and should be of interest to all concerned with health education. There is an excellent biography of recent reference material and a comprehen sive list of educational motion picture films with descriptive information and sources of procurement. This appears to be the type of book a college student would wish to keep for future reference in addition it is recommended for physicians concerned with community public health nurses and educators—GEORGE R. CARPENTER Col. MC USA

EMERGENCY TREATMENT AND MANAGEMENT by Thomas Flint Jr M D 303 pages % B Saunders Co Philadelphia Pa 1954

In this book the author has collected and organized information on the recognition and treatment in both medical and surgical emergencies at the level of the "emergency physician." The material has been arranged partly in outline form listing the prominent symptoms and physical findings in many conditions which may require urgent or immediate treatment. The conditions are listed in alphabetic order under diagnostic titles which detracts from the value of the book as a ready reference for aid in the differential diagnosis of apparent emergency situations. A large potion of the book is devoted to chemical poisions in the alphabetic P section. The last section deals with administrative clerical and medicolegal principles including Blue Cross coverage emergency records treatment permits legal responsibility and reportable diseases defined by most state health departments.

It appears that the book will appeal principally to physicians en gaged in industrial medicine but will have limited appeal to those in private or hospital practice—EDWARD C KENNEY Capi (MC) USN

SURGICAL TREATMENT OF CANCER OF THE CERVIX edited by Joe V

Meigs M D 462 pages illustrated Grune & Stratton Inc. New York

N Y 1954 Price \$12

This excellent volume edited by an authority on the subject pre sents all the known methods of surgical approach in the treatment of cancer of the cervix. It will serve as a valuable text for all who are interested in treatment of cervical cancer.

The views of the editor based on 35 years of experience with the disease are expressed in a highly informative and easily readable manner. The roles of surgery and radiation are discussed as to indication and relative ment. Emphasis is placed on the importance of chemotherapy and antibiotics and the need for painstaking care of

the patient before during and after surgery. The prevention and man agement of complications that may occur in radical surgery on the female pelvis also are discussed.

This book consists of 13 chapters three of which are devoted to an excellent description of the anatomy of the pelvis with illustrations and discussions of the importance of the lymph structures and blood vessels in radical surgery. The remaining 10 chapters contain brief but very interesting editorial comments by the editor and by his distinguished contributors on the various methods of surgical approach. These methods and technics are thoroughly discussed and beautifully illustrated. Included are surgical procedures for carcinoma in situ and for abdominal and vaginal radical hysterectomy. Total exenteration of the pelvic organs and the fulguration treatment of recurrent cancer of the cervic are discussed in detail.

I consider this book with its complete hibliography a masterful treatise on cancer of the cervix and recommend it as an essential addition to every medical library

-L MARSHALL HARRIS C M. (MC) USN

DISEASES OF WOMEN by Rob 1 f me C n, M D 10th dit 935
p g wth 990 11 trat i cld g 41 in c 1 Tb C V M by
Co 8t Lou M 1953 P \$1850

This gynecologic text has remained one of the standard references since 1907. The tenth edition incorporates many improvements over previous ones. The liberal use of colored diagrams and photographs together with many black and white pictures adds greatly to its attract typers.

While many of the chapters remain essentially the same there are several improvements. The chapter on anatomy and physiology incor porates the newer concepts of oogenesis and the development of the various ovarian structures. The section on endoctinology has been rewritten and brought up to date in the light of present knowledge. The psychosomatic aspects of gynecologic problems have been enlarged with a detailed discussion of the physical and psychic changes occurring during the formative years of puberty and adolescence. Much new material has also been added on vaginal smears pregancy tests culdoscopy culdocentesis and endocrine therapy. In this dy of argument over surgery versus radiation therapy is most timely.

As with previous editions this book is for the most part clearly and concisely presented it remains one of the standard textbooks in the field of gynecology and is highly recommended for students general practitioners or specialists as a sound conser ative reference

THE NEUROANATOMICAL BASIS FOR CLINICAL NEUROLOGY, by Talmage L Peele M D 564 pages illustrated McGraw Hill Book Co Inc New York N Y 1954 Price \$12 50

It is increasingly necessary to include in neuroanatomic textbooks more detailed discussions of physiologic function in order to adequately correlate and integrate anatomic structure. This author has gone even further in writing a well balanced text from the standpoint of neuroanatomy neurophysiology and clinical neurology Each part of the nervous system is visualized in its functional integrity within the whole The style is lucid and most pleasing and each chapter is tersely but adequately summarized Throughout the book the more recent advances along neurologic experimental lines are presented in sufficient detail to allow for proper emphasis and to permit under standing on the part of the reader. The annotated data both physiclogic and anatomic are meticulously presented Function normal and deranged is emphasized from the outset and in more detail than in the usual neuroanatomic text While some might criticize the details presented in the text and its length particularly for use as an introductory text nevertheless teaching experience in neuroanatomy has proved that there are all gradations of students and the more advanced and more intelligent demand the answers to many questions which can only be conveniently furnished by sufficient detail otherwise neuroanatomy becomes a memorized proposition

The text is as up to date as is possible in this rapidly changing field A certain number of experimental arguments and conflicting opinions are presented challenging the student to make up his own mind. The illustrations have been selected from many sources and are among the very best and well pictorialize the written material. The split page format is employed Bold black type is used to emphasize key words which make for ready reference. There is a bibliography of 870 titles and the index is adequate.

The organization and plan of approach in this text is the best that has come to the attention of this reviewer. Possibly the text might best serve the advanced student or the exceptional beginner. It should be read by every serious student of neuroanatomy and by those practicing neurologists who desire to keep abreast of current functional and neuroanatomic developments. Further, it should prove an excellent review for the neurologist who is preparing for the American Board examinations in neurology and it is a must for those interested in or engaged in the field of neurology. The author is a competent teacher of neuroanatomy as well as a clinician and the material was favorably reviewed by competent authority prior to publication. There is little this reviewer can add except the highest praise.

-RICHARD R CAMERON LI Col. MC USA



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TOOTH FORM DRAWING AND CARVING by Russ II C Wb 1 D D S 2d edition 106 p g ill strat d W B Saund r Co Phil d lphi P 1954

For its intended use by the dental ancillaries this easy to-read and understandable manual meets the author's objective and covers the subject matter adequately For the associated groups sepecially laboratory technicians perhaps additional emphasis could have been placed on why tooth contours grooves ridges and other anatomic features are so important to restore normal function More discussion of the anomalies of crowns and roots found in natural dentition would prepare the ancillary groups more adequately for the r part in the over all dental health picture. Establishing the concept of the third dimen sion by carving cannot be overemphasized for the dental student and associated groups. The emphasis placed on this in the manual is susperb

The organization form t and illustrations are excellent. The style of the m nual is easy to follow and understand and it is an excellent text for the dental student and associated groups in the study of dental anatomy——FRANCIS E CHAMINGS CL. USAF (DG)

RETROPUBIC PROSTATECTOMY by F s A B ti M D 44 Or ginal Drawing by \$\forall \text{Itam P D dius } \text{5 227 pag} \text{ Ch fl C Thom Publible For g fill \$111 1954 Pr \circ \text{\$11}\$

This monograph reviews the development of retropubic prostatectomy and appraises the results of this latest addition to the urologist's approach to the prostate. The author recommends limiting the applicability of this operation to benign prostatic enlargement.

Following a description of the anatomy embryology and blood supply of the prostate the author pre into an excellent discussion on his subject beautifully illustrated with color plates. His technic of the surgical procedure is described in great detail and graphically por trayed with 44 incomparable illustrations by William P. Didusch. He not only describes variations in technic but offers valid arguments for each His eccentric bag c theter which may offer some advantages is unique.

Both the preoperative and postoperative management of patients as well as the evaluation of associated disease fluid and electrolyte balance care of the catheter and treatment of complications are discussed in detail except that mention of postoperative bladder spasm for some reason is omitted A complete chapter is devoted to osterits publis the contention being that the condition is no more prevalent in this operation than in other prostatic surgical procedures

Finally the author thoroughly ev lustes the results of his first 100 patients treated by this method. His mortality rate of seven percent seems unduly high but the cases were unselected and 75 were service patients. A complete bibliography is appended to each chapter.

This book is a welcome addition to the urologist's library

—JACK % SCHWARTZ Col MC USA

DONOVANOSIS by R V Rajam, M S F R C P and P N Rangiah M D World Health Organization Monograph Series No 24 72 pages illustrated Columbia University Press New York N Y Distributor 1954 Price \$1 50

The disease discussed in this monograph is better known in this country as granuloma inguinale. The authors are associated with Madras Medical College in India as was Major Charles Donovan who discovered and described the causative organism of the disease 48 years ago. This no doubt was a major factor in the selection of the name. Donovanosis of or which the authors make an excellent case

Recommended particularly to students of venereal disease the work is concise and complete in all respects from the nomenclature and history of the disease through the pathology and treatment. The compiled information came from the authors own work and from a total of 82 references many of which are from the American literature. The organization of the material is excellent and logical with a minimum of extraneous facts and discussion.

Donovanosis is a disease which is seen sporadically in military practice and is not uncommonly misdiagnosed. Since it is a chronic, progressive destructive disease that may be incurable in advanced cases some knowledge of it is essential to the military physician.

This monograph is recommended as the most complete and timely source of information on the disease that is available at this writing ——SUNNOR T WITHERS 11 (MOLINN

THE STATUS OF MULTIPLE SCLEROSIS Editor Roy Waldo Miner Originally published in Ann Is of The New York Academy of Sciences Volume 58 Art 5 pages 541 720 July 28 1954 Illustrated The New York Academy of Sciences New York N Y 1954 P Lee 24 50

This book is a compilation of papers presented at a conference on multiple sclerosis held by the Section of Biology of the New York Academy of Sciences and the National Multiple Sciences Society in April 1953

The papers are all well presented and in some of them constructive criticism is included in the discussion. Although it is obvious that very little is known even now concerning this disease this is an excellent attempt to bring together in one book not only all of the cur tent work in progress but also the present status of all methods of treatment. Although no treatment has yet been successful in halting the progress of the disease various factors have prolonged the life of patients. These include an understanding of the basic metabolism of a patient proper nursing care and an appreciation of psychologic mechanisms. The use of drugs including histamine ACTH cortisoner.

adenylic acid and sodium succinate is ably discussed and their limited value is stressed

This book will be of particular value to those practitioners who are faced with the problem of treating and following cases of multiple sclerosis as well as to research workers in the field

-HENRY S COLONY Comd (MC) USN

DOCTORS IN THE SKY The Story fight A ro M di 1 A oc ti by R b J B J M D Colo 1 M di 1 Corp U t d St Air Fo 326 page illustrated Ch 1 C Thoma P bil b Sp gf lid Ill.

Aviation medicine can be said to have reach d maturity. An apprecia tion of this growth can best be achieved by a review of its origin growth and development so admirably revealed in this narrative history the story of the Aero Vedical Associ tion in its first 25 years

The 12 chapters are replete with details which give the reader a deep apprec ation of the early struggles and later accomplishments of aerophysicians Among the interesting subjects covered are the growth of the specialty of aviation medicine the role of the physician in air com merce flight surgeons in milit ry and civilian life and the rise of avia tion medicine journ lism Particularly effective are descriptions of the many prominent and pion ering individuals who ha e been intimately as soci ted with the growth of av ation med cine in this country

There is a valuable appendix including lists of past officers hon orary members and fellows phy icians certified in this specialty leaders in the field and a selected bibliography There are more than 50 photographs which add to the readab lity of this timely book Notable also are the foreword by Dr John F Fulton of Yale an index of names as well as subjects and particularly a detailed account of the cardinal role of Dr. Louis H. Bawer in the creation and growth of a i ation medicine

The author who is also editor of the Journal of Aviation Med cine is to be commended on uccessfully accomplishing a difficult but important task The vital role of aviation medicine can better be appreciated

-- DAN C. OGLE M : Gen. USAF (MC)

ATTENTION ALL AUTHORS

The checking and correcting of references it may be said here and emphatically-one of the necessary drudgeries of documentationis dreary pa astaking work. If editors were permitted only one tip to authors it might be that they should restrict the number of references appended to their papers to those that are important and that they should be correct

New Books Received

Books received by the U.S. Armed Forces Medical Journal are acknowledged in this department. Those of greatest interest will be selected for review in a later issue.

- THE HUMAN MACHINE Biological Science for the Armed Services by Charles
 W Shilling Captain Medical Corp United States Navy 292 pages
 illustrated United States Naval Institute Annapolis Md 1955 Price
 \$5
- EARLY CARE OF ACUTE SOFT TISSUE INJURIES Committee on Trauma
 192 pages American College of Surgeons Chicago 111 1954
- SEGMENTAL ANATOMY OF THE LUNGS A Study of the Patterns of the Segmental Bronch and Related Pulmonary Vessels by Edward A Boyden, Ph D (Med Sc.) Professor Emeritus of Anatomy The Medical School University of Minnesota Minneapolis Minn 276 pages illustrated The Blakiston Division McGraw-Hill Book Co Inc. New York N Y 1955 Pice \$15
- An Outline of THE TREATMENT OF FRACTURES by the Committee on Trauma 5th educion revised and amplified 63 pages illustrated American College of Surgeons Chicago 111 1954
- THE YEAR BOOK OF THE EYE EAR NOSE AND THROAT (1954 1955 Year Book Series) The Lye edited by Derrick Vail N D D Oph (Oxon)

 F A C S. F R C S (Hon.) Professor and Director Department of Ophthalmology Northwestern University Medical School Attending Ophthalmologist Passavant Memorial Hospital Past Attending Ophthalmologist Cook County Hospital The Ear Nose and Throat edited by John R Lundsoy M D Professor of Otolaryngology The University of Chicago The School of Medicine 461 pages illustrated The Year Book Publishers Inc. Chicago III 1955 Price 16
- THE HIMMN MASTICATORY APPARATUS An Introduction to Dental Anthropology by Meyer Klaisky D D S Director Dental Division Medical Department of the Workm n s Circle New York N Y and Robert L. F sher D D S Department of Pedodontics School of Dental and Oral Surgery of the Faculty of Medicane Columbia University New York N Y Dental and Oral Surgery Staff for Orthodonics the Mount Sinas Hospital New York N Y Foreword by Wilton Ma ion Krogman, Ph B A M Ph D Professor of Phys cal Anthropology Graduate School of Medicine Univer ity of Pennsylvania Philadelphia Pa Introduction by Lemman M. Waugh D D S D D C Formetly Professor of Denustry and Director of the Department of Orthodonics School of Dental and Oral Surgery Columba University New York N Y 246 pages illustrated Dental Items of Interest Publishing Co Inc Brooklym N Y 1953
 - ANNALS OF THE NEW YORK ACADEMY OF SCIENCES Volume 59 Art 3
 The Relation of Immunology to Tissue Homotransplantation by J M
 Converse and 34 others edited by Roy Raldo M ne Pages 277 466
 illustrated The New York Academy of Sciences New York N Y Jan.
 24 1955 Price \$4

- U S ARMY IN WORLD WAR II Spe 1 Studes THE WOMEN SARMY CORPS by M it e E T dw 11 Offic of th Chi f of Mil as y 11 tory D p re me to the Army W hi gro D C 1954 841 pg illu mated U S G erome t P ting Off c W b gr 25 D C pn 36 25 (Cl th)
- ANNALS OF THE NEW YORK ACADEMY OF SCIENCES, Volum 59 Art 4
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 by R y Rald M er Pg 467 664 ill tr d Th N York Ac d my
 ISc nce N w York N Y Fb 3 1935 Pree 34
- THE DEVELOPMENT OF MEDICAL BIBLIOGRAPHY by Et Il Booden,
 Ph D A tat.Libra I R If ce Se And F e M di
 cal L br ry W sh gt D C. 250 p e 11 art 4 P bli h d by
 M d 1 l. brary A c to 1954 P s 55 Send d t A
 Cur t & M d l & Chun g c l F ulty f St t f M yi d B ltm 1
 Md.
- DENTISTRY IN PUBLIC HEALTH edit d by W It J P It n, B S D D S M S.P H De tal Dur croc Chef D f D tal R ur Bur of M dc 1 Se U d Stat P Bl H lith Sr c W h gto D C Ja b M W n, D D S M S P H Ch f D tal H lith Sc ton Dep ferm t f P ble H lith P hld lith P c 1 l bor t a w th J b T Fult D D S D t 1 Ser Ad D f H lith Serv U d Stat Chlér Bur W h g t D C J b W K st n, D D S D P P H A ta t Surgo G ral Ch f D t 1 Off U t d Stat P bl H lith S W h g t D C J b W K st n, D D S D P P H A ta t Surgo G ral Ch f D t 1 Off U t d Stat P bl H lith S W a h g t D C I tructer D t 1 P bl H lith G a g t w U a r ty Scho 1 f De tury d Albert L Rus II D D S M P H D tal Off Ch f Ep d m 1 g r d B m try Brach N to nal I trut t De 1 R h U ted St t P bl H lith S B th d Md 2d d t mpl t ly ed d w tt 282 p g H liss tr d W B S d C P bl d 1 pl p 1955 p r e 36 50
- THE YEAR BOOK OF UROLOGY (1954-1955 Y B k Se) d d by # ll m Wall Scott M D Ph D Dr tor Jame B h B dy U I gcalf ut: Th J h Hopk Hosp tal U I gt "Chtge Th Johns H pk H p tal D I gt "Chtge Th Johns H pk H p tal P f s or f U l gy The J h H pk Un ty Shool f M d 372 pg ll ur t d Th Y ar B k P blash foc C b g Ill 1955 P \$6
- P bl sh Inc Ch g III 1955 P \$6

 LABORATORY MANUAL OF BIOCHEMISTRY by B j m H u E t
 Bo k Abr b m M Glbert C. H St ad H rry W g b Chau
 ury D pa timent C ty Coll g of N w Yok 4th d tion 164 p g 1
 1 tr t d W B S d Co Ph I d lph P 1955 P c 33
- I trid W B S d Co Phildiph P 1955 P c 33

 THE VERTEBRATE BODY by All d 56 rucod R m Al de Aga z
 P f rol Zolgy d Ducctor N m f Copput ree Zolgy
 H rrad U s ry 644 pg ull tried 2d dt W B Sa d
 Co Phildiph P 1955 P 37
- A TEXTBOOK OF PHYSIOLOGY deed by J b P Fult n, M. D S 1 g
 Pr f or fth 11 roy f Nede c Y le Uni ty School of M d
 ne with b 11 bo on f12 t bt 17th dun 1275
 page ill tr d W B. Sa d C Phild lph P 1955 P:
 113 50
- Chr toph MINOR SURGERY edit d by Alt O b M D F A C.S William H d P f or f Surg y d Chirm f th D partin t f Surgery Tula U ty f 1 sans Shool f f Sked d Mixcb I E D B t y M D F A C.S P f or of Surgery A Chairman f th Depa timent f S g y B y I U y C I I g f M d c 7 h d t a a 547 p g II tred V B S und C Ph Lad Up P 1955 P e 189

- CURRENT THERAPY 1955 Latest Approved Methods of Treatment for the Practicing Physician edited by Houard F Conn M D with 12 con sulting editors 692 pages W B Saunders Co Philadelphia Pa 1955 Price \$11
- INTRODUCTION TO RECREATION EDUCATION by John H Jenny Ed D
 Associate Professor and Co ordinator of the Recreation Curricula
 Temple University Philadelphia Pa 310 pages illustrated W B
 Saunders Co Philadelphia Pa 1955
- A COMPREHENSIVE REVIFW OF DENTISTRY For Use in Preparing for State Board Lucensing Examinations edited by Vincent R Trapozzamo D D S F A D P Formedly Professor of Prosthetic Denistry Head of the Prosthetic Department and Director of Postgraduate Division Thomas W Evans Museum and Dental Institute the School of Dentistry University of Pennsylvania Professor of Prosthetic Dentistry Graduate School of Medicine University of Pennsylvania with the collaboration of 24 contributors 2d edition 665 pages W B Saunders Co Philadelphia Pa 1955
- THE JOINTS OF THE EXTREMITIES A Radiographic Study Notes on Non outine Methods Nonroutine Ideas and Less Common Pathology by Raym nd W Lew S M D Formerly Director Department of Radiology Con ultant in Roentgenology The Hospital for Special Surgery New York N Y 108 pages illustrated Charles C Thomas Publisher Springfield III 1955 Pice 38 50
- NEUROLOGY Volumes I II and III by S A Knnier Wilson, M A M D D Sc (Edin) F R C P Formerly Physician National Hospital Queen Square Senior Neurologist King's College Hospital Consulting Neurologist Metropolitan Asylums Board (L C C) Officer de L In struction Publique R F Honorary Fellow Royal Academy of Medi cine Turin Honorary Member Royal Academy of Medicine Belgium National Academy of Medicine Rio de Janeiro Neurological Societies of Italy Poland Denmark Holland Brazil Paris Vienna New York and Philadelphia the Japanese Association of Psychiatry and Neu tology the Society of German Neurologists the Medical Society of Copenhagen and the American Neurological Association Corresponding Member Neurological Society of Varsaw Edited by A Ninian Bruce FRCP (Edin) DSc (Edin) NDFRS (Edin) Lt Col RAM C Consulting Physician Bangour Mental Hospital and St Andrew s Hospital Hawick Consulting Neurologist Jordanburn Nerve Hospital I dinburgh Lecturer in Neurology University of Edinburgh Member Association of British Neurologists Honorary Member Ameri can Psychiatric Association Membre Correspondant Etranger Societe de Neurologie de Paris Membre Associe Etranger Societe Medico-Psychologique Paris 2d edition 2 060 pages 279 illustrations The Williams and Wilkins Co Baltimore Md 1955 Price \$37 50 per set of three volumes
 - ANTINICROBIAL THERAPY IN MEDICAL PRACTICE by Harrison F Flippin
 M D, F A C P Associate Professor of Clinical Microbiology The
 Graduate School of Medicine The University of Pennsylvania Visitios
 Physician Philadelphia General Hospital (Blockley Division) Chief
 Section of Infectious Diseases Department of Medicine The School of
 Medicine The University of Pennsylvania and George M. Eisenberg
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FIGURES AND TABLES

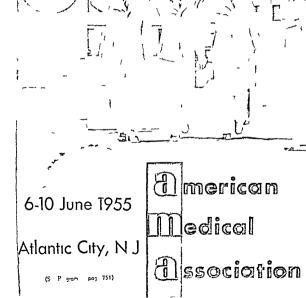
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Monthly Message

SPIT

I mute your attention to an excellent article by Dr Frank L Melenev entitled The Past Fifty Years in the Management I Surgical Infections" in Surgery Gynecology and Obstetics 100 1 January 1955 It is filled with interest, some humor and much instruction as it covers the history of the past half century In it he quotes an article by Dr Willis G MacDonald which appeared in 1906 "Practical Bacteriological Studies in the Surgical Clinic in which Dr MacDonald points out the dangers in the spread of surgical infections by the spray from the mouth I remember vividly in m own undergraduate days the attitude of the late Dr Harvey Cushing toward any of his assistants who coughed or sneezed or even laughed heartily while operating They were admonished in no uncertain terms to step away from the table and turn their head and if they had a cold they were not allowed at the operating table

In World War I the same danger of spread of infection from mouth organisms and carriers of stroptococci in the throat and nose was noted both in the British and American armies

Unfortunately in recent years particularly since World War II and the advent of the antibiotics there has been increasing carelessness on the part of the operating surgeons and their assistants, so that now it is not uncommon to see them cough directly into the wounds without a thought of stepping back or turning their heads Apparently they rest safe in the arms of a false belief of a huge umbrella of protection by the antibiotics forgetting the very essentials of the principles of surgery and the spread of infection I was brought up in the era of World War I and participated in the examinations of the throat and pharynx of many hundreds of troops so as to weed out the carriers of meningococci and hemolytic streptococci and ever since then I have been acutely conscious of these dangers. A single mask does not afford complete protection to the wound from the nose and throat of the operators but even if it did it is but common courtesy to turn one s head away when coughing or sneezing the mask should cover both mouth and nose And now from the purely practical standpoint this becomes all the more important in view of the resistance of many organisms to antibiotics

FRANK B BERRY UD
Assistant Secretary of Defense
(Health and Medical)

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Foreword

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FRANK B. BERRY M D
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Number R

COMPARATIVE METHODS OF ARTIFICIAL RESPIRATION

Study of Living and Dead Subjects With and Without Gas Mask

ARCHER S GORDON M D Pb D
CHARLES W FRYE M S
ROBERT D MILLER M S
GORDON M WYANT M D

DURING the past several years improved manual methods of artificial respiration have been adopted by the Armed Forces, American Medical Association, American Red Cross, U S Public Health Service, Federal Civil Defense Ad ministration, and other national and federal groups concerned with resuscitation This action followed an intensive research program co-ordinated under the Department of Defense by the Chemical Corps Medical Laboratories.

Four research groups carried out studies on warm, nonrigid corpses? normal adults curritzed anesthetized to apnea,? apnear ensethetized patients prior to surgical procedures,? patients who were apneared use to intracranial lesions of other pathologic conditions and anormal trained persons? All of these in vestigations were corroboratory in revealing that methods which produce both active inspiration and active expiration so-called push pull? methods result in more than twice as much pull monary tentilation as methods which only produce active expiration (Schafer prone pressure) or active inspiration (Emerson hip lift) Three of the push pull methods were found to be almost equally effective. These were the back pressure arm lift (modified Holger violsen) hip lift back pressure (Schafer Emerson hy) and arm lift chest pressure (Silvester). Further tests indi-

Fr m the Department f Clacl Sc nee Uni et ty of Ill no Coll ge of Medic

The two was sport d by grant from the Chemic l Corp Medial L bo to e Army Chimil Ce ter Edg vod, Md

cated that all of the push pull methods are capable of maintaining arterial oxygen saturation at near normal levels 10

The hip lift back pressure method is difficult to perform for long periods of time by a single operator ' ' and the Silvester method results in frequent obstruction of the airway because of the supine position 'The back pressure arm lift method there fore, was selected as best for general use. The hip lift back pressure and Silvester methods should be applied when specific conditions indicate their use or prevent performance of the back pressure arm lift.

Anticholinesterase (nerve gas) poisoning requires prompt treatment of the patient with injections of atropine sulfate, and artificial respiration. In field situations the manual methods will have to be used initially until mechanical resuscitation equipment and oxygen become available. This raises the question will push pull manual methods satisfactorily vontilate casualities wearing gas masks in a contaminated atmosphere? The current study was designed to resolve that question

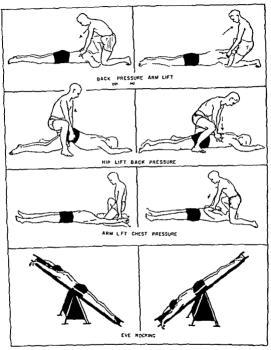
METHODS

Manual methods of artificial respiration were studied on (a) normal adults who were curarized anosthetized to total apnea and (b) warm, nonrigid corpses Determinations were made first without and then with the subjects wearing a standard M 9 gas mask equipped with an M 11 cannister

Studies on Normal Adults Seven normal adult male students were studied during total apnea induced with mixtures of curare and anesthesia Their ages ranged from 21 to 28 years and their weights from 135 to '05 pounds Normal resting tidal volume and vital capacity were determined before and after the application of the standard Army gas mask and cannister hach subject was then anesthetized and curarized by the method previously described by this group. A cuffed endotracheal tube was inserted into the airway and the subjects were maintained in the apneic state by controlled breathing and further anesthetic agents. The subject's respiration was at all times under the control of either the anesthetist or the operator performing artificial respiration.

Each of the three push pull manual methods was then applied. The prone and supine Eve rocking methods were also evaluated. The gas mask and cannister were then placed on the subject and the methods were repeated. In each series the sequence of application of the methods was rotated.

Ventilation was measured by means of a carefully balanced respirometer During performance of the methods on subjects



F gure 1 Technics of the four methods of artificial respiration used on normal adults and on walm, nomigal corpses

wearing the gas mask, intramask pressure was recorded by means of electromanometer transducers

Studies on Corpses Similar measurements were made on 13 warm, nonrigid corpses immediately after death and before the

TABLE 1 7	TIBLE 1 P Improxy entlation the error method 11 c	errou method 1 11 fc	J.	1000	pritono curar dane thet discernal adult	ane the	d no	mal adu	_	
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v		A1 4 1 A	4 430	\$ 382	3 788	4 388	4 533	4 \$12	3 498	4 362
	M9 ges ma k	Tdiim	476	119	ફ્ર	783	481	597	840	633
		Helfbky ur (SchfEm rely)	1 366	1 470	1 035	1 283	1 028	1 511	1 035	1 249
		Armif h p ur (Sil t)					1 254	1 304	952	110
א ביל ביל א ביל ביל	# E &	Bkp warmift (Highis)	1 325	1 573	925	116	892	1416	265	1 123
		H A	455	911	414	414	559	787	476	574
		'					352	487	331	393

TABLE 1 Pulmonary ventilation—th varous methods of artificial—spiration on cu arized-anesthetized normal adults—Continued

						Vent	lation (c	Ventilation (cc per cycl)	yel)		
Stat	Variation	M th d					Subjects	85			Mead
				-	2	-	4	~	9	7	
		II plift back pressure	saure.	662	849	830		1 138	952 1 138 1 167	1 159	974
Ann 18 11 11 11 11 11 11 11 11 11 11 11 11		Arm-1 ft chest-pre sure	re sure					1 118	890	828	945
cur il ed to apnea	M-9 g am sk q tpped w th M 11 cannister	Back p sur m lift	m lıft	559	455	890	830	1 304	882	869	836
		2010	Pron	290	911	455	579	393	393	646	524
		91117	S pine					207	248	559	338

	TABLE 3	TABLES VIII obs neduth us method 11		us method t cual p t	
	1		V (1 II (c)	(0)	
X S		h S an b	henz d m f d le	Eghtwarm nougd	p Su ou
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		N ga ma k	M9s m k	F d trach 1 tube	Neduchal tube
II p∼lıft bak presı	2	1 249	974	545	510
(Shfremrofy)	R 116	(1 028 1 511)	(662 1 167)	(124 911)	(75 890)
Arm I ft h t pre	z	1 1 70	945	512	480
(3.1.5)	2 2	(952 1 304)	(811 1 068)	(91 1014)	(54 994)
B ck.pe m lift	×	1 123	836	442	419
(II lge Nei e)	R S	(892 1 573)	(455 1 304)	(124 1 027)	(41 799)

TABLE 3 Ventilation obtained with various methods of artificial respiration—Continued

		L 3 Venti.	IABLE 3 Ventilation cotained with various methods of attificial respiration	tous memores of analysis	iai respiration	
				Ventilation (cc.)	on (cc)	
N	Method		Seven anesthetized curatized normal adults	thetized mal adults	Eight warm nontigid corpses	nonrigid
			Endotracheal tube	eal tube	Wearing M.9 gas mask	gas mask
			No gas mask	M 9 gas mask	Endotracheal tube	No endotracheal tube
	Prope	Mean	574	524	•	213
Eve rocking		Range	(414 911)	(393 646)	1	(40 509)
1	Supine	Mean	393	338	•	160
		Range	(331 497)	(207 559)	ı	(0 186)

Ventilation in only three of eight corpses

Studies on Corpses The ventilatory values obtained on the corpses were about one half of those obtained vith the curarized subjects however the relative values between the various methods are the same This same relationship between data on corpses and on curarized subjects was noted in previous tosts 3-4. The push pull technics gave the same relative results and all were more than twice as efficient as the Eve methods. When an endotracheal tube was not used the pulmonary venilation was somewhat reduced but all methods except the supine Eve method resulted in ventilation in all cases. With the supine Eve method the mean tudal volume was only 160 cc and in five of the eight corpses no epublishing vas obtained.

DISCUSSION

In this series of tests application of the various methods of artificial respiration without the grs mask produced results which duplicate those obtained in previous studies. When the gas mask and cannister were used the push pull methods retained their effectiveness. In curarized subjects pulmonary ventilation with these methods was one and one half times the resting tidal volume despite the resistance offered by the mask and cannister. These findings held for individual subjects as well as for the over all group in corpses the values vere almost the same as obtained in previous studies, and about one half as much as obtained in previous studies, and about one half as much as obtained in normal curarized subjects. Although the absolute values are reduced the relative values between the methods are essentially the same. With all of the push pull methods use of the gas mask without an endotrachoal tube resulted in ventilation in all cases with only a slight reduction in volume.

The prone Eve method produced only one half as much ven tilation as the manual push pull technics and only one third as much with the supine position. This hold for both the curarized subjects and the corpses without an endotracheal tube. Only three of eight corpses were ventilated with the Eve supine method.

These findings are related to the airway pressure differentials resulting with performance of the various methods. The hip-lift back pressure method creates the greatest inspiratory intramask pressure and results in the most ventilation. All of the push pull methods exceeded the Eve methods as regards intramask pressure differentials and produced greater ventilation. Because airway resistance and eveling rate were constant for all methods increased intramask pressure differentials would result in increased air flow rate. Cycling, rate being the same for all methods an increased flow rate results in an increased vol

ume per cycle This accounts for the greatest ventilation with the hip lift back pressure method and greater ventilation with the other push pull methods than with the Eve methods

With a clear airway, the back pressure arm lift method is adequate for overcoming the resistance of a standard grs mask with cannister and for producing artificial ventilation of a casualty wearing them in a contaminated atmosphere Increased airway resistance may result from respiratory secretions and/or bronchoconstriction following anticholinesterase poisoning. The hip-lift back pressure method offers the best possibility of overcoming this resistance because of the greater intramask pressure differential it creates it may be necessary to use this method until airway resistance has been relieved by aspiration, postural drainage, and administration of atropine sulfate. Then the back pressure arm lift method may be used because it is easier to perform for a prolonged period of time.

Recent investigations¹⁷ ¹⁸ have indicated that mouth to mouth insuffictions (or mask to-mask insuffictions in a contaminated atmosphere) can be performed for long periods of time, and will maintain adequate ventilation and normal blood gas tensions in victims with increased airway resistance, the positive in flating force of the operators expiration may be more effective than the manual methods for overcoming resistance

Although the prone Eve method provides less ventilation and requires the use of equipment (either provided or improvised), it is suitable if it becomes necessary for a few persons to re suscitate many victums simultaneously. By lashing together several standard Army stretchers one person can effectively rock and ventilate several persons at one time.

Maintenance of a clear airway is essential with all of these methods

SUMMARY

Tests on totally appears, anesthetized curarized normal adults and warm, nonrigid corpses indicate that all push pull manual methods of artificial respiration are effective for ventilating casualties wearing a standard M 9 gas mask equipped with an M 11 cannister

The hip-lift back pressure method creates the greatest intra mask pressure differential and should be most effective when there is increased airway resistance, such as occurs with bronchoconstriction or excessive airway secretions resulting from anticholinesterase porsoning If the airway is clear, the back pressure airw lift method provides almost as much yen tilation and is easier to perform

The Silvester method (arm lift chest pressure) produces as much ventilation and should be used when it is necessary to keen the patient in the supine position

Mouth to-mouth (or mask to-mask) insufflations may be effective in ventilating casualties with increased airway resistance

The prope Eve method gives about one half as much ventilation as do the push pull manual methods. In addition it requires a rocker either provided or improvised. For resuscitation of many persons by a few operators it may be necessary to fasten together several stretchers for simultaneous rocking by a sin le operator

Maintenance of a clear airway is of paramount importance for adequate ventilation with any of these methods

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THE HAIR SHIRT

Physicians wear hair shirts Perhaps no other group in our society is so self critical Physicians are constantly evaluating and re-evaluating their activities searching for errors that may be corrected and for better ways of operation

The hazard in this discipline of self criticism is the hair shirt com plex This is a neurosis characterized by distorted perspective. The victim frets about what is wrong with medical education forgetting what is right he grows peevish over the inadequacies of medicine losing sight of its amazing accomplishments he rails against the trained incapacity of physicians losing sight of the extraordinary competence of most Rage at the occasional abortionist dope peddler chiseler phost surgeon or rapist colors his view of the entire profession. His cries are heard in the market place. This disease is an occupational hazard in medicine Teachers medical writers and frus trated idealists are especially susceptible It is communicable Its virulence is greatly increased by animal passage through free-lance magazine writers who spread a malignant variant among the literate Large doses of medical history are curative but the best treatment is preventive For the malignant variant which afflicts people who have not been immunized by a formal medical education prevention is the only practical control measure

Prevention of the hair shirt neurosis does not involve the assumption that we are paragons in this best of all possible worlds. It does not involve elimination of the useful technique of self-criticism. It does not involve erecting barriers to legitimate medical news. Rather it involves unemotional honesty to insure that our public unerances and writings are in accurate perspective. Let us discard the hair shirt.

-MILTON R WEED M D in Detroit Med cal News p 6 Mar 14 1955

IS KOREAN SERVICE A HEALTH HAZARD TO CIVILIAN COMMUNITIES?

MYRON G RADKE F IL I A I MSC USAR REGINALD C THOMAS C PI MSC USAR JAMES F MRACEL C PIA MSC, USAR CAPLYLE NIBLEY J C PIA MSC USA ROLAND S ARONSON L W A I COI L MC, USA

N NUMEROUS occasions the question has ansen as to whether or not United States military personnel sening in the Far Eastern thereters would likely become carriers of tropical diseases. It was found at the close of World War II that many returning soldiers had become infected with endoprinsites. At the outbreak of the horean conflict the controversy arose again concerning the possibility of troops returning from this area transmitting these parasite diseases to the general American population. Craigi expressed the following opinion. "The return of these men undoubtedly will cause an increase in such infections in this country and will render a prompt diagnosis imperative if we are to prevent their spread. This controversial question obviously requires much evidence to resolve it therefore this study was conducted to give a better understanding of its potentialities.

In this survey a group of food handlers in the Third Army area, including both military personnel with and without I orean service and civilian personnel was examined for intestinal parasites and enteric pathogenic bacteria. This study area seemed appropriate because in general the southeastern section of the United States has always been considered to have a higher incidence of this eases due to these or banisms. The problems prompting this survey were (a) Are military personnel returning from Koroa likely to slow higher rates of infection than personnel without Koroa rivice (b) is the incidence of infection higher in rilitary than in civilian food landlers and (c) does a racial difference in the rate of infection exist?

MATERIALS AND METHODS

Fecal pecimens from 4 438 persons (925 soldiers with Korean service 2 799 without homean service and 714 civilians) were submitted to this laborator, from nine Arm, installations participating in the urvey According to the instructions given in the

technical manual, 2 each specimen was divided and submitted in two sterile 22 ml screwtop bottles. One bottle, for bacteriologic examination, contained buffered glycerin saline solution, and the other bottle, for parasitologic examination contained 10 percent formaldehyde

On receipt, each fecal suspension in buffered glycerin saline solution was inoculated on two eosin methylene blue agar plates, two salmonella shigella agar plates, and one selenite F broth tube. The following day the eosin methylene blue and the sal monella shigella agar plates were examined for typical enteric pathogenic colonies and the selenite-F enrichment broth was subcultured on two eosin methylene blue and two salmonella shigella agar plates Suspected colonies were picked from all plates and inoculated on kligler s iron agar Biochemical studies and typing were performed when the reaction on Kligler's iron agar indicated the presence of a possible enteric pathogen All plates were incubated for 48 hours before being discarded as negative for enteric pathogens

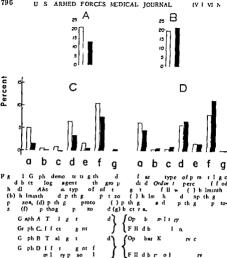
Specimens submitted for parasitologic investigation were examined by the direct smear and by the modified ether sedimentation technic (formalin ether technic) described by Ritchie ³ All para site agents found both pathogens and nonpathogens, were reported

RESULTS

Of the 4 438 stool specimens examined, 859 harbored one or more parasitic and bacterial agents. A total of 655 stools had one or nore types of protozoa (of which number 243 harbored a single pathogenic protozoan) and 146 stools had one or more types of helminths in addition, 51 stools had both protozoa and helminths. Seven stools were positive for a single significant bacterial agent.

In figure 1, graph A compares the total agents recovered from both military and civilian personnel. The military personnel had a higher incidence of infection than did the civilian. Graph C illustrates the various types of infections and shows that the military personnel had a higher rate of parasitic infection but a lower incidence of bacterial infection. The differences in infective agents found between the Negroid and the Caucasian races are represented in graphs £ through H (fig. 2). It may be noted that in all instances shown in those graphs, Caucasians had a higher incidence of infective agents than did Negroes Graph H however, shows that Negroes had a slightly higher percentage of nonpathogenic protozoa.

The total agents recovered from military personnel, illustrated in graph B indicate that soldiers without horeen service had a



slightly higher percentage of positive stools than did those with horean ervice A breakdown of infective agents into groups graph D indicates that helminth infections were more prevalent in personnel returning from Korea.

DISCUSSION

In this survey a single stool pecimen from each food handler was received and examined but if more than one specimen had been received and examined a higher percentage of agents would have been recovered.

Hoare stated that a single fecal examination by the zinc sul fate flotation method revealed only 50 percent of the protozoan infections Ritchie and others compared the formalin ether technic' with the zinc sulfate flotation method. The authors noted a marked superiority of the formalin ether technic over the zinc sulfate flotation method there being a higher percent of protozoan cysts helminth et as and larvae recovered by the former method

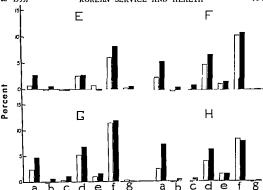


Fig. re 2. G aphs demonstrating the 1 cidence of various types of parasitologic and bacteriologic g arts in the groups studied. Ordinate and abscrssa same as a figur. 1 In figure 2 the open bar represent Negroes and the filled bars Caucasians.

Graph E civ I n per onnel Caph I milit ry p rsonnel

Graph G military personnel without Korean service

G aph H military per onnel with Korean service

The graphs in figures 1 and 2 corroborate information presented by Jacobs and associates the examined 4,000 stool specimens from military personnel native to the same section of the United States as the subjects of this study. Our survey also seems to substantiate Hunter's report in which he stated that parasitic and bacterial infections in military personnel returning from horea should not constitute a health problem in the United States

SUMMARY

Single stool specimens from a total of 4,438 military and civilian food handlers from the Third Army area were examined for parasites and enteric pathogenic bacteria. Those examinations revealed that about 10 percent of those food handlers were har boring pathogenic agents.

It was noted that the Caucasian race had a higher rate of in fection than the Negroid and, similarly, military food handlers appeared to harbor more agents than did civilians with like duties Military personnel who had horean service showed a slightly higher incidence of helminth infections, but the total of the agents recovered was higher from military personnel who had no Korean service

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Although this study has been restricted to an examination of 4 438 food handlers it is apparent that parasitic and bacterial infections in military personnel returning from horea do not con stitute a hazard to existing health conditions in the United States

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GOOD DOCTORING

More often than not we know in answering the sudden summons that we will be able to make little material contribution to the patient's well-being but we know that our presence will help. When death is inevitable the doctor doesn't waste his time when he stays by the pat ent as e en if the patient be too ill to appreciate his presence his friends and relatives will derive great support. All these and many other less tangible elements in good doctoring cannot be taught as formal items in the syllabus but they can be inculcated by example I think it s most important th t clinical instruction should involve as long a period as possible during which the student is attached to a physician and at another time to a surgeon. The formal content of his instruct on and work will be essentially scientific but in the day to-day conduct of clinical practice and in the chief's attitude to patients there is much that the student can learn. He will naturally discover that the practice of medicine knows no hours and the doctor can expect rest and refreshment only when there is absolutely nothing further the p tient needs for the time be ng

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SMALLPOX AMONG "VACCINATED" TROOPS

HARVEY H WALDO Major MC USA

ALL AMERICAN military personnel have been vaccinated against smallpox and are considered to possess some degree of immunity against the disease. It is disturbing, therefore, to find that some of these "immune" persons contract smallpox when exposed to the causative agent Such outbreaks occurred in American military personnel during the occupation of horea (where smallpox is endemic) and Japan in 1946. When the international situation caused American troops to be returned to Korea in 1950, additional cases were reported.

During the first six months of 1953, six patients with smallpox were admitted to this hospital. Four of these patients were American soldiers. This report includes cases of smallpox in both successfully vaccinated persons and those never having had a successful vaccination. Only one case history will be given in detail. This concerns the first admission and the only fatality.

CASE REPORTS

Case 1 A 23 year old white man was admitted to this hospital 1 Jan tarry 1953. He complained of the gradual onset during the preceding four days of headache fever chills cough sore throat nausea and vomiting. He had been given symptomatic therapy during this interval by his local dispensary. When his temperature rose and vomiting began he was hospitalized.

On admission he appeared ill His temperature was 1024° F. His pharynx was deeply injected his breath foul and his neck supple A roentgenogram of the chest revealed no abnormalities. The leukocyte count was 14300 per cum. The urinalysis findings were normal. The patient was treated empirically and given 180 mg (300,000 units) of procaine penicillin twice daily.

The following morning he developed maculopapular lesions on the trunk. During the day scattered lesions appeared on the face scalp and extremities. The patient's temperature was 104° F. A tentative diagnosis of smallpox was considered because (1) the lesions did

From 21 t Stat n Hospital Pus n Kotea Maj Waldo is now ssign d to U S Army Ho pital Fort Jy N 1

not appear typical of chickenpox (2) the patient denied that he had ever been vaccinated (3) no vaccination scar could be found and (4) he had "taken in a lattle korean beggar on 16 December because be looked cold and he had had the child sleep in the same room with ha and some buddes for four days (this occurred the same day that the soldier arrived in korea from Japan)

Procaine penicillin was increased to 600 mg (1 000 000 units) three times daily Due to the persistent vomiting it was impossible to give antibiotics by mouth and fluids and vitamins had to be administered intravenously. The patient was placed in strict isolation.

During the next 48 hours all parients and dury and indigenous personnel were revaccinated regardless of the date of their last vaccination

During the next three days the patient's temperature ranged between 102 and 104 F The lessons became widespread over the entire body necluding the palms soles and oral mucous membrane. The vesscles were uniform discrete umb licated and from 0.5 to 1.0 cm in diameter. The sputum was blood traged and the patient complained of a sore throat it was difficult for his to sneak or swallow.

For the next three days the patient's condition remained essentially unchanged. The leukocyte count was 18 100 per cumm with 53 percent lymphocytes.

During the following three days he stated that he felt somewhat core comfortable However edema of his face neck and fingers devel oped His temperature ranged between 99 and 102 F He was still unable to take food and fluids orally

On the ninth day of the rash (fig. 1) the patient's temperature rose to 103. F and he became more lethargic and drowsy. The following day, he became more restless and mentally confused. He developed a crusting on the face neck and scalp. His leukocyte count was 4 050 per cu. mm with 43 percent lymphocytes. Hemoglobin was 12.5 grams per 100 ml.

During the eleventh day of the rash the patient's general condition appeared to be more grave. He was given 20 mg of corticomopin (ACTH) intratursucil 1th and another 20 mg intratemously slowly over a three-hour period. Purillent mucus began to accumulate in his respiratory tree and he died that evening very suddenly while the nurse was straightening his sheets. No autopsy was performed.

This soldier had "parently not been vaccinated against smallpox. He denied any immunizations prior to entraine into the Army 11 months before. No vaccination scar could be found on this man Although his corpany items zatio record indicated a vaccinia reaction on 22 July 1952 he denied repeatedly that he had ever had a vaccination.

even after the procedure had been described to him in detail He arrived in Japan in September 1952 and was sent to Lorea 16 December 1952



Figure 1 (case 1). Photograph taken on the ninth day of rash showing usde spread umbilicated vesicles. Note the early crusting on the abdomen and the left force m.

Case 2 A 21 year old Negro was admitted to this hospital on 26 Jan uary 1953 Four days previously he had noticed the onset of sore throat fever and chills Penicillin had been given for three days and on the fourth day a rash appeared on the face trunk and extremities. He had been referred to the clinic with a diagnosis of possible infectious mononucleosis or penicillin reaction.

A tentative diagnosis of smallpox was made and he was placed in strict isolation. Treatment included terranycin (brand of oxyretra cycline) and penicillin to help combat secondary infection and scar ring codeine and Dobell's gargles. By the following morning the macular and early vesicular rash had become generalized except for the palms and soles. Fluids and a soft diet were well tolerated.

On 29 January the fifth day of the rash the patient first developed lesions on the palms and soles

A three-day period of mental confusion and discrientation was fol lowed by beginning desquamation. Through even the most critical period the patient continued to take sufficient food and fluids orally. At the time of tran fer of the patient to Japan the location of every smallpox vesicle could be seen as a lighter pigmented area of the skin but no definite scart ng was notted.

The v ccination history on this soldier is significant. He had been in the Army nearly two years yet it seems that the had not had a successful vaccination against smallpox. V ccination prior to service entry was denied. No vaccination scar could be found. His official immunization record with his company showed the following 4 June 1951 immune 20 April 1952 no reading 29 October 1952 immune (The patient did not recall this last vaccination and claimed that he was on temporary duty in another area of horea when the rem inder of the company was vaccinated.) This soldier admitted having had close control with horeast civilian.

Case 3 A 21 year-old Filipino soldier was admitted t this hospital on 17 February 1953. Then brought to the hospital he had well-devel oped and we despread in cular and ves cular lesions and was acutely ill. Though a la ge vaccination scar was present a diagnosis of small pox was made. The patient was pl ced on terramycin and procaine penicillin therapy in addit on to the ymptomat c measures. The pitient is cour e was stormy but after the first we k he began to improve Desquanation commenced on the fifteenth day and involved the hair finerenal is and toenails.

This sold er was born in the Philippine Isl ods He had received a successful vaccination in childhood In March 1952 he was vacci netd developed no reaction and the result were not checked by a medical officer. He was ent to korea in May 1952. In November he was agan vaccinated but in isted be got no reaction (Office al immunization ecord unobtainable) He had cloe contict with korean civilians.

Case 4 A 21 year old Negro was admitted to this hospit 1 on 15 March 1953 with a diagnos s of derm tit, medicamento a Five days pror to danss on he had developed fever c yza and sore thro t He was treated with te ramycin and because a rash developed he was sent to the hospital

He appeared sen usly ll and wes cular lesions were widespread involving evin the olimembiane scalp palms and soles. A diagnosis of smallpox was made and strict is olation was instituted. He was given penic llim and terramycin. On the fourth hospital day some of the facial lesions became pustular and both nostr is became occluded by lesions. The following day his rague was woll in his fice and ankles edema.

tous and his nose was swollen to twice its normal size. During the next three days many lesions became hemotrhagic, but the secondary infection slowly subsided

Desquamation was complete on 26 May There was mild alopecia but no loss of nails Severe facial scarring resulted particularly on the nose

This patient was inducted into the Army in 1951. He was sent to korea in January 1953. Vaccination prior to entry into the service was denied Careful examination disclosed no vaccination scar. There was an entry on the patient s immunization register to the effect that he had been vaccinated against smallpox in January 1953. He caregor ically denied ever having been vaccinated. He admitted to having had close contact with Korean civilians.

Case 5 A 21 year-old yourh was admitted to this hospital on 1 April 1953 Both the referring and admission diagnoses were influenza Four days prior to admission he had experienced the sudden onset of sore throat fever prostration and severe aching in his back and extremittes. His temperature was 101° F. He had a circular area an inch in diam eter containing numerous small erythematous macules on the upper outer aspects of the left arm. An old vaccination scar was present in the right deltoid area.

During the second hospital day the patient became weak lethargic and vomited his evening meal. Two days later papular lesions appeared on the face thorax and other extremities. A presumptive diagnosis of chickenpox was made

The patient was extremely ill with prostration vomiting and fever to 105° F. Lesions appeared on the palms soles scalp and oral mucous membranes By 6 April it became apparent that the correct diagnosis was smallpox. Umbilication of many vesicles was now evident Procaine penicillin and terramycin were given to help combat secondary infection.

The subsequent course was uneventful desquamation was completed by $21~\mathrm{May}$ and no residual scarring was apparent

This soldier was a native of Puerto Rico successfully vaccinated in childhood He entered the Army in May 1952. In July 1952, he was vaccinated but denied any reaction. He arrived in korea in January 1953. The patient stated that he was supposed to have been vaccinated against smallpox aboard ship but denied receiving the vaccination. A history of close contact with korean civilians was readily obtained.

Case 6 A 26-year old Swedish soldier was admitted to this hospital on 9 June 1953 Four days prior to admission he had developed coryza fever chills headache and sore throat Encephalitis was suspected and he was admitted to another United Nations hospital in the area. The spinal fluid was essentially normal A febrille course was com-

tinued and on the day of interhospital transfer erythematous macular lesions first appeared on the wrists and later became generalized

Penicillin and terramycin were started Some parenteral fluid was necessary during the first two days. The course of the disease was rather mild in spite of the fact that about 50 percent of the lesions became hemorrhagic. A few pustules appeared on the nose forehead and checks. Desquamation was complete on 15 July. The hirr and nails were unaffected and no permanent scarring was evident.

The patient was succe sfully vaccinated against smallpox at the age of eight years. When revaccinated in 1941 he denied a reaction. While still in Sweden he was v coinated again on 16 April. 953 and this was re d as immune the following day. On arrival in orea on 24 April he was stat oned in a rear area. Two weeks prior to onset of the illness he had v sited a house of prostitution in which two persons with smallpox were discovered several days thereafter.

SYMPTOMS AND SIGNS

In these six patients the prodromal symptoms were coryza malaise sore throat and fever Those present after admission included rash lethargy weakness prostration cough and he moptwis Only two patients demonstrated mental confusion and were discrientated both of these were without a history of successful vaccination Aching of the back mentioned in nearly all textbooks was seen in only two patients Anorexia and vomiting occurred in four patients. Three patients did not have head aches. The rash anopeared first on the trunk in only one patient.

DIAGNOSIS

Frozen vesicular fluid and fixed skin scrapings from these patients were submitted to the 406th General Medical Laboratory for studies Information supplied by that laboratory placed the infectious agent in the vaccinia variols group.

From a clinical standpoint there was no doubt as to correctness of the diagnosis of smallpox in these patients Diagnostic confirmation was obtained from both the korean Public Health officers and more experienced United States Medical Corps members

Many physicians have never seen a patient with smallpox and until having seen one exhibit a low index of suspicion It is interesting to note that, though four patients were admitted with the rash apparent in only one patient was smallpox suspected A referring diagnosis of smallpox was not made in five of these patients. In an area where smallpox is endemic a strong suspicion of an occasional case must be present Because the prodomal signs and symptoms are protean and common frequent

inspection for early skin lesions and vaccination history are the essentials in making early diagnosis and in preventing others being exposed

TREATMENT

Symptomatic treatment and good nursing care are still fundamental in this disease Antibiotics are effective on secondary invaders. It is believed that secondary infection and resultant scarring is reduced by antibiotics given in sufficient quantities. The permanent scarring in one patient may have been the result of delayed hospitalization and antibiotic therapy Only two patients complained of pruritus, and in one of these medication was necessary.

All patients complained of a severe sore throat In spite of this, the maintenance of an adequate oral intake of food and fluid should be the cardinal aim of the physician Frequent gargles cannot be too strongly recommended, they should be started early, at the first sign of sore throat, and continued on a definite schedule The fever and prostration in the disease are severe Alteration in body metabolism, cellular changes, fluid transudation, and tissue destruction are marked and can be likened to the changes produced by burns over a large area of the body If adequate caloric intake is maintained the body has a good chance to respond The patient who died lacked any oral caloric intake because of inability to swallow food

VACCINATION

The value of smallpox vaccination has been demonstrated time and again Though it can not offer absolute protection, a recent successful reaction is of great assurance. It is again the balance existing between virulence of the causative agent and the degree of immunity present that counts. The three patients who had received a successful vaccination in childhood had a less severe disease. None of the patients had a recent successful vaccination, and three had apparently never had a successful vaccination it is interesting that the three patients having had childhood vaccinations were from Puerto Rico the Philippine islands, and Sweden

American soldiers are presumably vaccinated on induction and again prior to being sent overseas. Errors in immunization can be entirely eliminated only if the physicians are charged with sufficient knowledge and interest. The physician should be certain of his own knowledge of interpretation of vaccination, the time interval between vaccination and interpretation, the correct entry in immunization registers, and the revaccination of any person without a definite reaction. Care must be taken

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that immune is not recorded on patients who have had a no take If every soldier could see a patient with smallpox, there would

be no problem The soldier would see to it that he was vacci nated on time, and successfully In reality there are those who scheme to escape immunizations A hospital patient who heard that a patient with smallpox had been admitted requested permission to return to his company for a vaccination. He stated that he had never received any immunizations in the Army because he always had a buddy who penciled in his shots When the personnel in our own hospital unit were vaccinated 50 per cent had to be revaccinated because they failed to return for readings Intensive efforts must be maintained to continue to vaccinate each soldier until a definite reaction is observed Obviously a "no reading" or no reaction is ineffective and unacceptable in preventing spread of smallpox A vaccination given correctly with a potent vaccine read at proper time by trained personnel and properly recorded, is the first line of defense against this disease

SUMMARY

Six cases of smallpox occurred among United Nations person nel four in American soldiers Three of the patients apparently had never had a successful vaccination. The other three had been vaccinated in childhood but had not been vaccinated suc cessfully recently The disease in these last-mentioned patients however, was less severe than in the other three Although the majority of military personnel are properly immunized constant vigilance the detection of errors in vaccination and records and continued intensive education of medical department per sonnel are necessary to eliminate the possibility of future out breals of smallpox

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CONTINUOUS RENAL CLEARANCE STUDIES IN EPIDEMIC HEMORRHAGIC FEVER

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ROBERT A MARKELS Capta n MC USA

SINCE early 1951, the Army Medical Corps has accumulated much information on epidemic hemorrhagic fever from its experiences in Korea Documented and indexed, this data will serve as an excellent source for future reference either directly related to the specific disease in the area, or indirectly as workers borrow from these experiences in handling problems of a similar nature ansing in another geographic area. The investigative work on hemorrhagic fever produced new knowledge of abnormal renal physiology. In addition to its immediate application in treating patients with hemorrhagic fever, it has great potential in the approach to other diseases in which the kidney is involved.

The clinical features laboratory findings, anatomic pathologic lesions, and epidemiologic data of hemorrhagic fever have been reported at great length 1-10 The appearance of specific renal abnormalities along with certain clinical manifestations during the course of the disease, are essential in order to classify a "suspect diagnosis as "confirmed." For a diagnosis to be con firmed, evidence of renal abnormality must include albuminuma and an elevation of the blood urea nitrogen Evidence of renal tubular insufficiency with diuresis of low specific gravity urine and diminished phenolsulfoughthalein output are always present in patients with confinied diagnosis. The characteristic renal pathologic lesion as seen at autopsy, is considered to be near pathognomonic of the disease. There is marked medullar, con gestion due to hemorrhagic diathesis. The cortex is pale and bulging so that the corticomedullary junction is very distinct. The ny ramids present areas of necrosis surrounded by hemorrhagic medullary tissue Microscopically, the glomeruli do not present as much change as noted in the tubules Tubules of the loops of Ienle and collecting tubules are surrounded by dilated, engarged vascular spaces and extravasated blood They show epithelial degeneration and casts of all types including pigmented casts

The nature and variable degree of renal function abnormality in homorthagic fover has been noted in previous reports 1-1 10-11 For Valter P d Arry Hospit 1 Vashi gia D. C. The tudie wire mad tithe 48th August 1 Hospit 1 Kore

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Froeb and McDowell described their findings in mena hemodynamic abnormalities when using standard clearance technics. These investigators used renal clearance of inulin and paraminohippurate as estimates of glomerular filtration rate and effective renal plasma flow respectively. The design of their study was basically a spot check on a certain day of disease consisting of three or four clearance periods of about 20 minute each. In most patients spot checks were made from two to several days apart.

The study herein reported was undertaken in the fall of 1953 at a time when seasonal increase in case incidence was in prog ress. Its primary design was a continuous renal clearance study with around the clock perfusion of para aminohippurate for esti mation of renal blood flow changes during changes in the patient's clinical course. This primary design as suggested by Earl and McDowell was in contrast to the spot-check design of Froeb and McDowell's studies It was reasoned that a continuous renal clearance study would provide information regarding charac teristics of the disease process not demonstrated in previous in vestigations. In an attempt to determine this we did the following (1) charted the time rate of fall in renal blood flow to determine if it was gradual or precipitous with hypotension (2) charted the time rate of return of renal blood flow to normal to determine if it was gradual or precipitous (3) correlated the time rate and degree of fall in renal blood flow with hypotension and shocklike state (4) studied patients in the early febrile phase to learn if changes occurred in renal blood flow which might be missed by spot check technic and (5) correlated the changes in renal hemodynamics with clinical findings blood pressure total serum protein hematoont, unne volume and unne specific gravity

METHOD AND MATERIAL

In so far as possible patients in the early febrile phase of the disease were selected for study An attempt was made to include only those patients in the third to fourth day of illness as determined from the clinical history. Thirteen patients in whom about 136 individual clearance periods were made were studied.

A polyeth-lene catheter was introduced into the femoral vein through a 16 gage thin walled needle. This method permitted continuous around the clock infusion without a single instance of tube occlusion or flow obstruction due to other causes. It oliminated the disadvantages inherent in prolonged arm vein infusion namely patient discomfort bed confinement and temporary dissess of an upper extrently for performing necessary chores in some patients a continuous infusion was maintained over a period of four days without untoward reaction in the patient. With careful attention to urine flow effective tunnel clamp adjustment, and

frequent blood sample analysis near constant levels of plasma para aminohippurate were realized

No standardized procedure was established for the time interval between clearance periods. The frequency of clearance periods was largely a function of the phase of the disease and the nature of the clinical course. With an unstable clinical course presenting varied and multiple changes, an increasing frequency of clearance periods was used. In general, however, we followed a program of daily clearance periods in the early morning, early afternoon, late afternoon, early evening and late evening. This program provided data on renal hemodynamics every four to six hours over a given 24-hour period. Reported values for these periods are based on two or more clearance periods of from 20 to 30 minutes each. Five of the 13 patients studied during the acute phise were checked at some time during the convalescent or directic phases.

Glomerular filtration rate and effective renal plasma flow were measured by standard endogenous creatinine and para amino hippurate clearance technics in the following consisting of two that of Froeb and McDowell A tunnel clamp consisting of two tongue depressors and two screw clamps gave adequate control of the infusion rate After each unne collection the bladder was washed with 60 ml of normal saline solution two or three times followed by 30 ml of air Because of the clinical problems of fluid control and restriction it was not possible to effect a water divires prior to each clearance

RESULTS

Figures 1 and 2 present a summary of the renal hemodynamics in patients from the third through the tenth day of disease

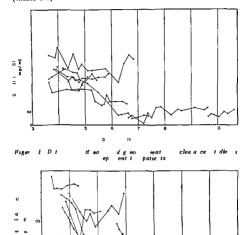
Figure 1 summarizes the data on continuous endogenous creatinine clearance in representative patients. The data illustrate the following characteristics

- 1 In general clearance of endogenous creaturine in most patents was not as markedly impaired as clearance of paraminohippurate. This resulted in relatively high filtration fractions A likely explanation for the creaturine data will be discussed later in this article.
- 2 In patients C C, E H, and C C, extremely low clearance of endogenous creaturine corresponded with markedly reduced para aminohippurate clearance. In these patients marked hypotension a shocklike state, and oligura were outstanding clinical features.
- 3 in patients R S R T, and G S there was relatively slight change in clearance of endogenous creatinine although substantial drop in clearance of para aminohippurate (fig. 2) was

Pe a amin h ppu

Fgur 2 Dta

recorded There was no significant change in blood pressure urine flow or hematocrit during this period in these patients (tables 1 4)



4 The time rate of fall in endogenous creatinine clearance was gradual and not precipitous de pite wide fluctuations in blood pressure in some patients during this period (tables 14)

a-min h pp rate

TABLE 1 Renal / nction dunng febule phase and in convalescent penod of herioril agic fever

P 18	(mm)	140/76	140/80	140/80	130/70	126/70	120/80	140/70	140/80	134/82		122/76		136/74		146/82
S run.	pr te n (gm./100 ml)	67			6.7				99					9	9 9	
	tocnt	52	,		25				20					44	44	
P E	nitrog n (mg./100 ml)	16 5			24.4					2 9 2				12		
1	41 u	× c	2 E	±	Tr ce	Trac	±	ŧ		±		±		z Z	8 2	Neg
Urine	gra ity	1 054	1 020		1 015			1 013	1 012				possed sus	1 006	1 007	1 007
	(u u	1.75	5 8	1 13	1 %	1 14	92	94	2 1	78	89	7.3	Convalescentperso	20	3 63	3 63
r Itra	fr c tion	\$:	3 3	. 9	72	8	81	63	2	*	52	8		24	22	21
T ltra	E C	300	4 5 4 5	292	241	310	220	235	275	244	236	250		192	170	170
	(II) (II)	705	8 5	620	334	300	270	370	300	420	410	410		198	750	800
	e <u>t</u>	103	, io	104	001	•66	100	100	ž	98	986	986		98		
	Hour	1611	1800	330	0845	1130	1430	1900	2030	0060	1200	2100		1010	1030	1100
, q) # ·	2			~					4		_	•	6		

C PAH clearance of para aminohippurate C Cr clearance of creatinine both in ml /min

	Bl d gmm Hg)	130/80		124/80		120/80		104/60		0/40	105/50		05/06
thag fev	S m 1 1 (gm./100 m1)	6 2 5	63	63	63	6 2 5	6 25		2.0	2.0	7.0	0 /	10
(p mo)	He to	52	53	53	\$	8	28		8	8	52	22	\$
nul to d sh morrhag sev	B1 d ur rog (ng /100	191					35.2				7 65		
	U alb mm	-	2	‡	3	3	3+	*	3+	3	*	*	3+
p t	un a	1 017	1 015	1 018			1 014			1 015	1 014		1 016
ld 81 pus), E	27.	27.5	89	22	23	2	\$	46	53	25	85	12
	- ·	45	59	\$2	53	22					1 20	49	25
TABLE 2 R 1/1 dur g byptns	C CR (ml/	154	111	166	171	160					22	24	52
, , ,,	C PAH (ml/	336	320	320	3.0	360	280	220	120	37	11	49	22
E 2 R	ŧ 	102	102			101	101		8	88	86	88	8
TABL	Ξ.	1000	1200	1300	1700	2200	0060	1300	000	2100	0060	1100	1400
	y - \$	4					٠				9		

ntinued	Blood pres re (mm 11g)		106/60		136/74	140/76		128/90
ic fevera-Co	Serum t tal protein (gm /100 ml)	10	6.7		8 9			
топрав	Hem tocrit	52	12	•	44			
TABLE 2 R nat fe ction during hypothensive and oliguric phases and in convatescent period of hemoribagic fever-Continued	Blood ur a nume n (mg/100 ml)				14			
onvalescen	U ine alku m n	44	3+	pous	×	Neg		Neg.
s and sn c	Uriae spe cific 8 a			Convalescent penod	1 004	1001	1 006	1 005
uric phase	Urine (#1 / min)	42	42	Come	4 31	3 68	2.2	292
silo bub ai	Filtr tion frac tion	32	36		ş	41	28	36
hypothensis	C CR (nd /	13	13		170	166	83	153
tton during	C PAH (md / mid)	40	36		410	400	420	424
nal fre	ia o	99	986		88			
NLF 2 R	=	1800	2100		1330	1445	1545	1645
TA	ي م م				23	_		

C PAH clearance of para aminohippurate G-Cr cleatance of creatinine both in ml /min

144/100 146/100 136/100 24/92 20/76 87/22 126/72 42/88 45/90 S um to al p (gm / 100 ml) 99 3 99 d Ibm mb gcf E Z 5 9 7 8 (mg /100 ml) 8 33 2 4 al/B ~ 5 ⁴ € 왕 d ju 4 1 00 1 007 1 001 00 1 002 8 8 100 nd) (E c 44 ٠. laran 2222 dur g th d ð ÿ (∈ 205 5 2 8 8 8 8 8 8 8 8 TABLE 3 R 1/ 1 h pp (PAH (mg / Ë 185 210 210 210 145 146 140 150 640 630 645 615 E Į, 82 1500 1630 1930 2300 2300 0900 1300 2000 1300 1400 1500 8 C PAH 1 Ξ 8

TABLE 4 Renal function during the early convalescent phase of hemorrhagic fever

Blo d pressure (mm Hg)	136/74		140/76		140/76		140/92		128/90	
S tun total prot in (gm / 100 ml)	99									
liem tocrit	44									
Blood ure trogen (1g /100 ml)	92									
Urme 1b m n	N S	Nes	Neg	Neg	Neg	Neg	z	Neg	Neg	Neg
Ura pe- cific gr v- ity	1 004	1 00 4	1 001	1 002	1 004	1 004	1 006	1 005	1 003	1 004
Un ¢ (al/ min)	2.1	2.0	2.3	1.89	1 76	2 01	2 33	2.2	2 3	2.9
Filtr tio f c	33	32	30	28	23	28	54	82	22	28
C C (m) /	170	991	150	150	140	150	133	153	200	153
C PAII (ml / mi)	510	\$10	200	\$30	345	\$20	\$24	530	\$ 50	540
£	936				986					98
=	0060	1300	1400	1500	1600	1700	1800	1900	2000	2300
O of it	23									

C PAII clearance of paramminohigpurate C Cr clearance of creatinue both in ml /min

5 Impairment of clearance of endogenous creaturine was present in some patients in the early febrile phase before hypotension oliguria and/or hemoconcentration appeared. This suggested early renal channes before more obvious and gross clinical channes were apparent.

The results of continuous para aminohippurate clearance in representative patients are summarized in figure 2. The data illustrate the following characteristics.

- 1 The outstanding feature was the gradual and progressive diministron in this function indicating failing effective renal blood flow. The curves clearly show that precipitous fall within hours is not the usual manner of functional change, but that over a 24- to 72 hour period maximum diministron result.
- 2 Significant diminution in clearance of para aminohippurate may be present in the early febrile period at a timo when blood pressure is stable urine flow copious specific gravity of urine indicative of adequate concentration and hemoconcentration is absent (tables 14). At this time however evidence of diffuse vascular disease is apparent in pharyngeal conjunctival axil lary and thoracic petechiae and ecchymoses at various body pressure points
- 3 A correlation in the time rate and degree of fall in para aminohippurate clearance with the clinical course of the disease was apparent
- 4 The curves demonstrated maximum fall in clearance of para aminohippurate occurs on the fourth day in patients with mild disease and on the fifth to sixth day in those with more severe disease. In a patient with clinically mild disease such as in patients R T M T and R S the rotum of clearance toward normal was underway at a gradually progressive rate within 24 hours of the maximum fall. In patients with clinically severe disease such as in patients C C E H C C and L C maximum diminution persisted during the study period of from 48 to 72 hours.
- 5 In all patients studied excepting patient M T the return of para aminohippurate clearance to normal did not occur within a 24-hour period from the time of maximum fall In most patients there was a tendency to plateau at the point of maximum fall for 48 to 72 hours without significant change in the clearance function
- 6 C B was a control patient with lobir pneumonia whose clearance of para aminohippurate remained normal throughout the course of illness even in the presence of high fever

THE FEBRILE PHASE

Table 1 summarizes data on renal function during the febrile phase of disease The patient had characteristic clinical fea tures of hemorrhagic fever with fever, nausea, vomiting, head ache, marked erythema over the malar eminences and anterior chest, axillary and pharyngeal petechiae, a relative oliguna on the fourth day of disease, a mild brief diuresis of low specific grivity unne from the eleventh to nineteenth day and a maximum rise in the blood urea nitrogen to 30 mg per 100 ml on the seventh day. The significant changes in renal hemodynamics were as follows

- 1 The effective renal plasma flow on admission as measured by para aminohippurate clearance was within normal range
- 2 The effective renal plasma flow began to fall during the second day of disease At this time blood pressure was stable at normotensive levels, and the blood urea nitrogen urine flow and specific gravity were normal. The hematocrit, however, was slightly increased, indicating some degree of hemoconcentration (table 1).
- 3 The striking pattern in functional change was the slow, pro gressive manner in which the effective renal plasma flow dimin shed to abnormal levels during the febrile phase. At the time this fall in renal blood flow was taking place, the patient demon strated evidence of severe widespread vascular involvement in the form of pharyngeal, conjunctival, axillary, and thoracic petchiae, and ecchymoses over body pressure points.
- 4 Follow up studies revealed that the effective renal plasma flow had returned to normal limits by the ninth day of disease At this time residuals of tubular damage were manifested by low specific gravity urine inability to respond to pitressin stimu lation, and abnormal urinary concentration test.
- 5 As measured by clearance of endogenous creatinine there were no significant changes in the glomerular filtration rate. The clearance of endogenous creatinine was considerably in creased during the patient's febrile state as compared to the afebrile state. These high values when compared to the decreased clearance of para aminohippurate resulted in high filtration fractions which returned to normal values during the convalescent period (table 1)
- 6 The data obtained during the convalescent phase indicated that ronal hemodynamics had returned to normal limits

HYPOTENSIVE AND OLIGURIC PHASES

Table 2 summarizes data on renal function during the hypoten sive and objuine phases with follow up data obtained during the convalenced period on the twenty third day of disease. The clinical course of this patient's disease was much more severe than that of the patient recorded in table 1. The clinical severity was attended by a more severe impairment in renal function as measured by laboratory technics (compare tables 1 and 2). The simulicant changes in renal hemodynamics were as follows

- 1 Again as noted in table 1 the striking pattern in functional change was the slow progressive manner in which the effective renal plasma flow diminished to abnormal levels. This fall occurred independently of blood pressure status and was well underway before maximum rise in blood uren introgen hematocnit, and albumnura had occurred (table 2)
- 2 In contrast the fall in the glomerular filtration rate was much more directly related to the enset of hypotension maximum rise in blood urea nitrogen maximum rise in hematocrit, and oliguna
- 3 The drop in urine volume was progressive rather than procip itous as recognized in a gradual fall from 0.70 ml per minute to 0.29 ml per minute throughout the fifth day of disease
- 4 The increased severity of this patient's disease as compared with the course in the patient recorded in table 1 is further noted in the failure of the effective renai plasma flow to attain normal levels by the twenty third day of disease. However it was markedly improved over the minimum noted on the sixth day of the disease.

DIURETIC PHASE

Table 3 summerizes renal function during a representative diuretic phase with follow up data obtained during the convales cent period on the twentieth day of disease. The clinical course of this patient's disease had been moderately severe although not as grave or stormy as that of the patient recorded in table 2 At the time of study he was secreting copious amounts of low specific gravity urine which reached a maximum flow of 6 5 liters on the eighth day of the sase. The significant changes in renal hemodynamics were as follows.

1 The effective ment plasma flow remained at an abnormal low level (table 3) without significant change during the two days of continuous clearance study Its value was independent of marked rise in unne volume and the pre ence of hyperten sive blood pressure recordings in the presence of extensive tubular

damage, the alteration of tubular epithelium could result in fail ure to extract para aminohippurate from renal pentubular blood, thereby contributing to the low para aminohippurate clearance

- 2 The glomerular filtration rate also remained consistently low without significant change during the period of continuous clearance study It was independent of the marked rise in unne volume (from 570 ml on the fifth day of disease to 6,500 ml on the eighth day of disease)
- 3 With a more proportionate diminution in clearance of para aminohippurate and endogenous creatinine, there were normal and relatively consistent values for filtration fractions. This would suggest a phase of similar functional status for both glomerular and tubular sites although the glomerular on autopsy specimens do not present nearly the abnormal changes noted in the tubles 3 4 However the shortcomings of the Jaffe reaction, used for creatinine determinations, throughout this study are important factors in interpreting the glomerular filtration rate as measured by the clearance of endogenous creatinine. This point will be discussed in more detail later in this article.

EARLY CONVALESCENT PERIOD

Table 4 summarizes data on renal function during a representative convalescent period. The clinical course of the disease of the patient represented had been moderately severe with a rather stormy course during the hypotensive and oligoric phases. He had a brisk diuretic phase with copious urine flow of nearly 5 liters over one 24 hour period. At the time of this study he was ambula tory eating well, gaining weight, and complaining only of easy fatigability and mild lethargy. The significant findings in renal hemodynamics were as follows.

- 1 Low normal values for the effective renal plasma flow and the glomerular filtration rate were noted on the twenty fifth day of disease
 - 2 Urine flow was at normal daily output of from 2 to 2 6 liters
- 3 Evidence of tubular abnormality persisted in that his urine was of low specific gravity and it failed to respond to pitressin stimulation or to concentrate after withholding liquids
- 4 Throughout the 24 hour period of continuous renal clearance study there was no significant change in the values obtained

DISCUSSION

No serious attempt can be made to compare these data on fil tration fractions and glomerular filtration rate with those of Froeb and McDowell because different methods were used Froeb and McDowell used inulin as a measure of the glomerular filtration

rate In using creatinine clearance as a measure of this rate an obstacle in the matter of specificity of function was introduced That creatinine is not as specific a clearance substance as inulin for estimating glomerular filtration is well appreciated Previous workers! 'have demonstrated that in man and the higher anthropoid apes clearances of creatinine definitely exceed clearances of inulin and of ferrocyanide From their work it must be recog inized that a certain proportion of creatinine found in the urine of man is the result of secretory activity of renal tubular cpi thelium."

Another fact which adds difficulty to comparative study is the wide variation in creatinine clearance noted under normal conditions. At average rates of unne flow this variation may extend from 86 to 232 ml per minute 1

Adding further to the differing values by the two methods is the nonspecificity of the Jaffe reaction herein employed for the detection of creatinine Langley and Evans and Miller and Dubos¹ demonstrated that of all the chromogenic material ror maily found in blood all that in the secum and one half that in cells gave the color reactions of creatinine with alkaline picrate whereas the concentration of true creatinine as indicated by the enzymatic method of Miller and Dubos¹ is about one half that of the Jaffe reaction

Another reason for discrepancy in and limitation to comparative study is found in the work of Miller and Dubos These workers found that substances other than creatinine which gave the Jaffe reaction will accumulate in the plasma in nephritis Therefore data on the concentration of creatinine in the blood in renal disease must be accepted with reservation

From the data available however it is believed that the fall in the glomerular filtration rate was more closely correlated to defer vescence onset of hypotension rising albuminuma, lowered specific gravity of unne rising blood urea nitrogen and hemoconcen tration than was the fall in the effective renal plasma flow The continuous renal clearance technic demonstrated in patients M T G S and L C (fig 2) that the effective renal plasma flow may be diminished early in the febrile phase Later in the febrile phase a slow progressive diministion underway for 24 to 48 hours could result in a significant fall in the effective renal plasma flow before proteinuria low fixed specific gravity of unne hypotension oliguria hemoconcentration or rising blood urea nitrogen appeared

The conclusions drawn from this data agree with the suggestion of Froeb and McDowell namely that renal failure is secondary to alterations in renal vasculature Because of the alterations in

vasculature, probably due to direct action of a toxin progressive fall in renal blood flow occurs. The onset of this change begins early in the disease at a time when other equivalents of general ized vascular damage (marked erythema over malar eminences and the anterior part of the chest, crops of conjunctival, axillary, and the anterior part of the chest, crops of conjunctival, axillary, and shoulders feet, and ankles, positive Rumpel Leede test for capil lary fragility hematemesis) are present. The ultimate appearance of renal failure is most likely secondary to this alteration in renal vasculature. Then with critical reduction in renal blood flow and pressure from extravasated blood, tibular failure occurs secondary to anoxia of the epithelium. The data herein given tend to support this conclusion, rather than the concept that a toxic sub stance acts directly on the renal tibular epithelium.

SUMMARY

Continuous renal clearance studies in patients with a confirmed diagnosis of epidemic hemorrhagic fever as experienced in Korea revealed information not previously described Continuous measurement of the clearance of para aminohippurate demonstrated that diminution in effective renal plasma flow can occur early in the febrile phase of hemorrhagic fever before significant change in the clearance of endogenous creatinine. This was at a time when clinical findings of generalized vascular damage (diffuse petechine, ecchymoses hematemesis, positive Rumpel Leede test) were present, but before evidence of renal failure appeared There was a tendency for a critical fall in the clearance of endog enous creatinine to occur only in those patients in whom hypotension a shocklike state, and marked oliguria were observed In most patients the time of a critically low level of effective renal plasma flow was during defervescence of plasma leakage (naing hematocrit) A significant decrease in the clearance of nary aminohippurate or of endogenous creatinine may occur in the absence of hypotension or oligura Return of the clearance of para aminohippurate and creatinine to normal occurs before tubular concentrating capacity The data suggests that renal failure is secondary to renal vascular damage and not a toxin acting directly on the renal tubular epithelium

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KOREAN SURGERY

Eleven reports from th Surgic I Rese rch Team in Kore and the Army Medical Service Grad ate School Walter Reed Army Medical Center Washington D C appe t in the M rch 1955 saue of the Annals of Surgery Thes t po ts on battle c palties will be of int rest to all medical officer

THE CHALLENGING ART OF PSYCHOTHERAPY

Materials and Methods and Uses of Hypnosis

JOHN E NARDINI Commande (MC) USN WARREN L JONES L utenant (MC) USNR

PSYCHOTHERAPY is the treatment of mentally or emotionally ill patients by direct personal contact, primarily on a verbal level All doctor patient relationships contain a psychothera peutic element. Only in recent years has a reasoned, studied approach been made to the problem. As with many modern psychi atric concepts modern psychotherapy may also be considered to have had its inception in the work of Freud As psychiatry evolved from the body of neurology, increased attention was centered on concepts of personality development, psychopathology and psychotherapy The greatest single impetus has been the introduction of psychoanalysis In spite of many serious limitations, there has been a determined effort to evaluate thera neutro needs technics and results from the classic analytic technic a wide variety of forms of treatment have been developed and used These forms vary in manner duration and depth of treatment in direct relationship to the patient's needs At present, one of the greatest handicaps in evaluating psychotherapy is the inability to measure results Criteria of cure are most inexact. and it is difficult for the therapist to divorce his personal bias from his own evaluation of therapeutic benefit after having in vested considerable emotion, time and energy

THE PLACE OF PSYCHOTHERAPY IN MEDICINE

It has been variously estimated that 50 percent of all patients who seek medical aid have no significant physical illness A large proportion of these patients need some degree of psychothera peutic assistance in some cases only a superficial need is present but in others the need is more extensive. Few patients are satisfied to be told that they have no diagnosable condition or that their complaints are imaginary. This very often throws them directly into the hands of charlatans. This produces poor results for the patient, wastes his money, and indirectly supports and encourages an ill trained and relatively unethical group.

Almost all physicians should have as much practical knowledge and skill of psychotherapy as possible Psychotherapy is based on a dual relationship hence the role of the patient and the therapist should be considered separately

THE PATIENT AND THERAPIST

One of the most significant features to consider is that psychotherapy cannot be forced Complete collaborative effort is essential Most patients do not know what psychotherapy entails and hence cannot be expected to say whether or not they desire it. Further they should from the beginning wish to speak to the psychiatrist on their own initiative. It is only in rather few in stances that psychotherapy can be helpful where the patients initially have and retain a hostile rejecting attitude. Qualities that make therapy possible are a desire on the part of the patient to be helped a potential capacity, for intellectual honesty (because the patient is destined during the therapeutic process to become consciously aware of some of the less desirable as poets of his nature) sufficient intelligence and a willingness to make or attempt to make significant changes in his behavior and way of life.

Much could be said regarding the qualities of the therapist. The attributes which seem most important in the successful therapist are a genuine sympathotic interest in people and human nature a great deal of patience a reasonable knowledge of psyschology and psychologhamics a good grounding in general medicine so that he is capable of separating functional from organic complaints considerable tolerance and freedom from bias (or an adequate awareness of his own prejudices if any) and a considerable curiosity toward and interest in advancing the understanding of therapeutic problems for treatment to be successful the therapist must be sufficiently sympathetic to his patient so that he will not become overly involved emotionally with his patient. The therapist should be honest, sincere and interested in the patient and his problems The therapists attitude may be natural or if preferred for some reason tailored to suit the needs of a particular patient or stuation

THE THERAPEUTIC SITUATION

Given a qualified therapist and a patient who desires treatment the first step is the referral in general the referring physician should make it clear to the patient that he is unable to find any significant abnormal organic condition present and that sometime emotional factors can produce these same symptoms that for these reasons and in the best interests of the patient, he would like the patient to talk to a psychiatrix who might be able

to offer some help in determining the nature of the condition and perhaps provide some treatment. It is far better that the patient refuse to see the psychiatrist at that point than to have him come to the interview so full of resentment, hostility and rebellion that the psychiatrist's and the patient's time are equally wasted, and the patient subsequently prejudiced in his dealings with physicians in general

Considerable time is now required for psychotherapy, extending from a matter of several interviews up to complete psychoanalysis of six hourly sessions per week over a period of three years. There is still considerable disagreement as to which patients require brief or prolonged treatment. In general, it can be compared to minor and major surgery. The patients who are least disturbed and have the least difficulties can often be benefited by only a few sessions. It is often difficult to say whether these same patients would have recovered spontaneously or whether they might have developed further serious psychiatric illness. Sometimes during these shorter therapies it is possible to recognize a significant and major issue, which when pointed out to the patient can be used by him to reorganize his thinking or approach.

In the therapeutic situation and in all doctor patient relationships transference phenomena are important By this, we mean that the patient unwittingly and unconsciously tends to project the same feelings toward the therapist that he had toward sig nificant people (primarily parents) earlier in his life Thus, if his feelings were positive and contained love for the parent he would reflect the same toward the therapist In the same manner, negative, hostile or rebellious feelings would be reflected in some way toward the therapist. This helps to account many times for what appear to be irrational attitudes on the part of our patients, and unless considered in this light can provoke the physician into unwise rejection and hostility, or an equally unwise sense of his own greatness. In general it can be said that the more frequently treatment is given and the longer it con tinues, the more extensive the transference relationship becomes In the analytic situation it is essential that this so-called trans ference neurosis be resolved.

At a fairly early stage in the treatment, it is essential for the therapist to carefully evaluate the patient's assets and liabilities on a fair and impartial basis. It is folly to expect that every patient will be able to achieve the same results. It is likewise folly to presume that treatment will often make a patient greatly better than he has ever been at his best before. At some point in the treatment it is desirable that the patient himself realistically recognize his basic assets as well as his liabilities.

GOALS OF TREATMENT

On the surface it would seem to be a simple matter to define the goal of treatment, however it is one of the most evasive and difficult aspects of therapy Confusion often stems from the fact that there are two sets of goals in mind one the patient s and an other the therapist's each separately arrived at and differently determined. The other major difficulty is that patients experience great difficulty in establishing their own treatment goals Many have no idea of what therapeutic goal to strive for while others place the goal at an unrealistically high and unobtainable level Treatment is best accomplished when the goals are realistically established and the therapist does not impose or force his own concepts on the patient Goals may vary from the eradication of a symptom to a thorough reorientation toward life and a signif cant and extensive reorganization of attitudes and personality Some nationts establish as their goal the ability to alter their husband or wife or to become so improved that they can incor porate in themselves all of the good and desirable characteristics that they observe in others. These are not reasonable goal con cents

When considering the neurotic patient it must be realized that his symptoms have probably served as a prop for many years If the prop is to be successfully removed in the course of treatment it must simultaneously be replaced. Benefit or cure requires the patient to realize the irrationality of the neurotic mechanism and the underlying factors of insecurity and anxiety. He will further need to develop a more realistic tolerance and love of self and his follow man liate is a luxury no man can long afford vithout self respect one cannot be happy and cannot love or respect others. Lack of self respect makes for an ever increasing isolation which must be broken if the patient is to be helped

Psychosomatic disorders are little different psychotherapou tically from other conditions except that a useful guide to effective treatment exists in the exacerbation or abatement of symptoms. The conflicts and emotional disturbances are often deep seated, and considerable therapeutic time and effort is required. Contrary to some opinion it is believed that the same person is capable of a wide variety of psychosomatic complaints whintends to belie the concept of specific emotional causative factors. Also the same person is capable of producing different somatic symptoms in different areas at different times. Much work remains to be done in studying and correlating basic personality types emotional complexes, and the resultant psychosomatic symptom nattern.

MISCELLANEOUS FACTORS

The general tenor of psychotherapy is reorganization of the pa tient's ego strengths so that he is a more co-operative, useful, and probably more conforming member of society, but with reten tion of his spontaneous creative capacities. The psychotherapist should not make the mistake of trying to treat a patient as though he lived in a vacuum, free of the constant social cultural political, moral, and religious influences that beset him on all sides and at all times. A patient subjected to an over permissive form of treatment designed to rid him of restricting and paralyzing fears and guilt may have to pay too great a material and spiritual price if he does not remain within the bounds of normal social living. Rarely is it indicated for example, that a psychiatrist should become personally involved pro or con in the matter of religious faith

In the minds of those who first come into serious contact with psychiatry there is the belief that a given set of diagnostic psychodynamic principles and formulas exist, and that when these have been mastered and applied to a treatment situation the patient situation the patient situation the patient situation the profit of the case. The dynamic principles and theoretic formulations at hand offer considerable help in understanding the nature of psychopathologic processes in certain areas in certain patients, but it is virtually impossible for them to provide an adequate explanation for every complex conflict symptom and its total interrelationship. One must avoid becoming so bogged down in trying to ferret out separate significant dynamic mechanisms that the over all needs of the patient are missed.

Some basic concepts however are essential such as a comprehension of security feelings. It is important to understand the different mechanisms that undermine security and the resultant symptoms that different persons may manifest when insecure. The patient is rarely ever able to state openly that he is insecure. It is therefore necessary that the therapist recognize insecurity by understanding its significant manifestations. It is important to understand that many forms of apparently foolish and useless behavior and ineffective, bizarre forms of thought represent in reality inadequate defenses against anxiety. Another common response which is true both individually and collectively is that of deprivation and persecution of fusitation of aggression, which if blocked of depression and apath.

SUGGESTIONS FOR THERAPEUTIC APPROACH

The therapist must listen carefully and meaningfully This involves constant thinking during the interview and an attempt at

correlating significant utterances with past experiences reactions and statements

The patient should be allowed to discover and recognize significant relationships himself whenever possible. These discoveries are often most appreciated by the patient and most helpful to him in reorganizing his new approach to his problems

Interpretations should be timed accurately. Any interpretation offered the patient regarding his psychologic pattern gains or loses in force with proper or improper timing It is extremely difficult to teach this most significant process because it never occurs twice the same way

Abreactive productions are usually of benefit and should be allowed when they seem to come forth freely and spontaneously Patients usually do not produce more than they are able to direct. at least eventually

It is advisable to instruct the patient to make no major life decisions during the course of extensive treatment,

It is difficult but necessar, to recognize and handle the patient's resistances to treatment as they arise otherwise the course of treatment may be slowed or blocked to further progress

While we are accustomed to thinking of our usual form of communication as verbal there are many wholly nonspecific manifestations on the part of the therapist consisting of facial expressions gestures change of position tone of voice and even occasional unintelligible grunts which can just as effectively convey significant meaning to the patient. These should be used only in keeping with the therapist's ability to communicate in this fashion

A frequently effective means of getting the patient to see the relationship of his symptoms to anxiety situations is to carry him back to the earliest possible episodes which were associated with the anxiety. With practice on the part of the therapi t and the patient, this is often a rewarding device

As soon as possible the therapist should attempt to determine or recognize the central core of the patient's problem and to isolate the major and minor conflicts so that he may best guide the course of therany

Playing God is likely to invite considerable subsequent dissatisfaction for both patient and physician Direct advice is best avoided except at times in single interview sessions and even then the patient should be advised that because he is the one involved and will be obliged to live with the decision the final decision should be his own

HYPNOSIS IN PSYCHOTHERAPY

In introducing a discussion of hypnosis and its application to psychiatric treatment, it is necessary to describe the character istics of the condition Despite the frequent demonstration of hypnosis popular interest in the subject, and years of research, relatively little is known regarding the state described as hypnosis. Though numerous theories have been advanced it seem best to regard hypnosis as an alteration of consciousness which may occur in varying degrees. Hypnosis has found general acceptance in the field of entertainment, understandably so because numerous undisual stage tricks have been devised making use of a small area in the total hypnotic spectrum.

Hypnosis as an effective medical technic has been accepted in varying degrees in the past. History reveals that prior to the introduction of chemical anesthesia hypnosis often was used for major operations. Hypnosis, both in the past and at present has found application in various fields of medicine and surgery

Psychiatry has been slow to absorb and make use of the possibilities of hypnosis Probably one reason for this is that psychiatry is vague enough without adding another vagary. Also the difficulty of inducing a workable stage of hypnosis has been a significant barrier. It is understood that one of the reasons Freud turned away from hypnosis was his difficulty with its production Valuable phenomena may be brought out in the light or medium stages of hypnosis however, only the deep somnambulistic stage permits the development of age regression, recall of repressed memories complete amnesia, and disintegration of blocking resistances.

Psychotherapy as a process of treating mental illness is a cooperative enterprise. This demands the utmost of the patient's emotional and intellectual energies and taxes the psychotheranist to help without hindering the patient in his process of reintegra tion and progressive independence from the therapeutic setting Even in the hands of the most capable therapists this is often time consuming, prolonged expensive, and at times uncomfortable Recent experiences with hypnosis have indicated the possibility of its shortening treatment and augmenting the process to the advantage of both patient and therapist Hypnosis is not a form of psychiatric treatment per se its use is analogous to the use of anesthesia in surgery, permitting psychotherapy to be conducted under a kind of mental anesthesia This agent per mits a clearer view of many hidden, guarded areas of the mind and has the property of permitting psychic probing with greater safety for the integrity of the personality structure A tenuous mental adjustment which could disintegrate into a state of psychotic

disease or a major panic reaction is given protection for example by the hypnotic induction of amnesia at the conscious level. Hypnotic applications in psychotherapy may be said to act as a buffer during intense emotional reactions incident to the processes of psychotherapy

The hypnotic eradication of a psychogenic symptom is usually useless because the majority of these conversion or hysterical symptoms represent a mental compromise which in effect avoids even greater distress. Taking away the symptom without changing underlying structures of the mental makeup leaves the patient in a bad spot, giving him no alternative but to fill the hypnotically produced gap with some new compromise for relative comfort of his partially disabled ego. It has been found effective to use hypnosis for example in the management of an hysterical paraly sis by assisting the patient under hypnosis to gain control of a paralyzed area yet leaving him with a small remaining area of paralysis to which he can attach on an unconscious level the same dynamics that qualitatively produced his original more reneralized symptom For example an hysterically paralyzed arm could be converted into a residue of paralysis involving only the little finger hypothetically leaving the patient with a degree of stop-gap mental compromise but with fairly adequate function of a member that may be instrumental in making his living " When meddling with the processes of personality structure particularly during times of neurotic exacerbation or prepsychotic dysfunction we must be careful not to treat a symptom which is actually figuratively speaking the only remaining crutch for the ego which enables it to limp along on the side of reality

From a technical standpoint it appears that hypnotic processes cannot be forced or produced against the patient's will The deeper stages of hypnosis are invariably attained through the active participation of the patient. The patient by his own decision enters a state of altered consciousness and while in this tate participates in the incorporation of suggestions given by the hypnotherapist. It is the responsibility of the therapist to direct an accurate approach This entails judgment in regard to the patient's capacity to accept and make use of suggestions The timing of these suggestions is of extreme importance. A psychotherapist soon learns that during the course of psychotherapy the stakes are high much may depend upon what would under ordi nary circumstances appear to be a very minor or trivial matter Words suggestions and interpretations made by a psychotherapist may be likened to the scalpel in surgery Mistakes in their use as in the use of the scalpel can prove disastrous severely crimbling a patient who otherwise might have had a fairly opti mistic prognosis Reportedly the use of hypnosis permits wider

exposure, revealing a more direct approach to the psychopath ologic condition, limiting mistakes, and giving more control of the field of psychiatric treatment ²

One example of the safety factor in hypnotherapeutic technic is that of assisting the patient to project his pathologic mental content onto hypnotically fantasied secondary objects Later these projections of the patient are incorporated into the process of treatment. One such hypnotic technic is called "the theater technic " This method is occasionally used with patients who are suffering from acute angety symptoms of recent origin. A fairly deep level of hypnosis is inducted in the patient and he is instructed to fantasy himself a member of an audience in a theater As he watches, it is suggested that a master of ceremonies will soon appear on the stage and will look behind the curtain The patient is then informed that the master of ceremonies peers behind the stage curtain, then turns back to face the audience, and it is grossly evident that he is tense, anxious shaky wor ried, perspiring and in apparent "nervous distress" It is suggested to the patient that whatever the master of ceremonies saw behind the curtain caused him to become quite upset. The patient is then told that the lights of the theater are dimming and as he watches the curtain will part and he will soon see what it was that produced so much anxiety in the master of ceremonies In this manner the patient is put in the position of projecting from his own mind what is conceivable to him as a frightening set of circumstances Without realizing it he will as a rule project what is uppermost and most significant to him at the time reveal ing unconscious traumatic areas which may have been instrumental in producing his own anxiety reaction

Other projection devices are being developed for the patient's recognition of conflicting circumstances or other dynamic processes of emotional illness and are used often in hypnoanalysis Most generally these are procedures that the therapist and the patient both work on while the patient is at a deep hypnotic level At a conscious level some revelations can be traumatic for the patient, threatening his personality structure to the extent of a major setback Therefore prior to awakening the patient, amnesias are produced or in other ways distortions are made that protect the patient from areas that are too powerful and could overwhelm him At times the patient is called upon to help while deeply hypnotized with decisions regarding his conscious capacity to make use of and integrate the information that becomes available to him from his own deeper mental areas As he im proves during the course of treatment he may be desensitized and gradually brought to realize more fully the significance of areas within his own personality

Another method for reaching distorted mental areas is the approach to trauma in early life by age regression of the patient. It is reported that numerous hypnoanalysts of reputable back ground are able to produce regression in their patients to the points of origin of mental maladjustments. Under regression the precipitating circumstances are altered and in effect ironed out. Often during the course of psychotherapy the patient may be blocked when approaching a significant emotional area. This area of resistance is usually resolved only by a time consuming process of debouring and then getting back on the original course eas of debouring and then getting back on the original course easily into the area of resistance thus saving time and continuing directly to the objective by avoiding the many blind alleys en countered so often at the conscious level.

Psychotherapy is frequently used to assist the relatively normal person in his struggle to overcome the temporary effect of predominantly external pressures impinging on his ego. It is proposed by numerous investigators that hypnotic technics can be used to facilitate the patient s recovery to his former stage of normal personality integration. The physical and mental relaxation obtained during deep stages of hypnosis permits the patient to gain a new orientation, particularly if he is given control of his condition and encouraged to gain by his own efforts the relaxation and comfort secondary to his hypnotic experience. Ultimately the patient may become more independent and self contained dealing with his problems as they arise and not seeking satisfactions from a dependency relationship with the physician which would hamper the termination of treatment.

Though there are numerous uses for hypnosis in psychotherapy it has also been found to be advantageous in the field of psychi atric research. A recent article points out the development under hypnosis of experimental conflicts. While the subject is in a deep state of hypnosis a conflict is introduced by the hypnotist. Emotional distress at the waking stage and amnesia for its cause are the objective and the condition to be studied. These persons are treated for the induced neurosis by somewhat contrasting psychotherapeutic methods. Observation and objective estimates by psychologic tests following these psychotherapeutic technics give a relative indication of the value of the method used.

The future of hypnosis in psychotherap, and in medicine judging from reported success and research in university centers and large clinics is expanding and becoming respectable by the application of objective critical research Hypnosis in itself is an exatting tool which in the process of uncovering the mysteries of the brain and its potentialities would appear to have tremen dous power perhaps even beyond our present expectation. New

methods for understanding and channeling mental forces can perhaps be devised with hypnotic technics. The intrinsic capacities of the individual human being his regenerative, defensive, and reparative psychic powers not to speak of the possibilities of dormant mental energies, would appear to be closer to our purview than ever before

SUMMARY

For psychotherapy to be successful, the patient must desire to be helped and the therapist must exercise equal amounts of skill, patience, and objectivity. An important factor in the success of psychotherapy is for the patient and therapist to agree on, and keep in view, a realistic and attrinable goal of treatment

If skillfully used, hypnosis by shortening and simplifying treatment is a valuable aid to successful psychotherapy. The deep stage of hypnosis permits the production of such valuable phenomena as the development of age regression, recall of repressed memories complete amnesia and disintegration of block ing resistances These phenomena open to the therapist critical areas of the psyche which other methods might never reveal, and permit their exploration under a kind of psychic anesthesia. In addition, psychiatric research has indicated that hypnosis may have therapeutic potentials even beyond present expectations

CONCLUSIONS

Psychotherapy is many things. It may be specific or nonspecific, directive or nondirective, active or passive deep or super ficial It may include ventilation, authoritarian pronouncements exhortations, persuasion, suggestive comments bypnosis or none of these It may seek to reach emotional insight, but succeed no further than intellectual insight. In the final analysis psychodemanding frustrating and highly therapy is an inexact challenging practical art

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creased to 42 She responded to bacıtracın after each attack and there was no allergic reaction. Another patient in this series was given 20 000 units of bacitracin intramuscularly two or three times a day over a period of 10 months with a total of 10 000 000 units without any evidence of residual kidney irritation or dam age Another patient took 10 000 units every eight hours for 50 days and 20 000 units every eight hours for 83 additional days with no allergic manifestations

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As a result of this series of experiences the number of laboratory tests on patients being treated with bacitracin could be reduced considerably The daily check on kidney function was found to be unnecessary provided the prescribed intake of fluid was raintained and urinary output was about 1 000 ml daily Albuminuma could be expected to appear generally on the third or fourth day reaching a low peak on the fifth to the seventh day and then subsiding It invariably disappeared as soon as or soon after bacitracin was discontinued (In fact many of the patients in the earlier series who had shown albuminuma were brought back at that time and were found to have normal urine) Side effects were miniral Some patients had a loss of appetite and a few had nau ea and vomiting but this was readily elimi nated by admini tering 25 mg of dramamine (brand of dimenhydrinate) by mouth at the time of each intramuscular injection of bacıtracın

In the meantime the producers of bacitracin continued to in crease its purity resulting in lower toxicity of their product. In January 1952, the Food and Drug Administration found that the assay specification could be increased from 35 to 50 units per mg Instead of the LD₅, test for toxicity (which was not always consistent, due to different strains of mice used), a "safety" test was proposed, namely, an LD₅ of 100 units for a 20 gram mouse

CLINICAL RESULTS STUDIED

We were then asked by the Food and Drug Administration to carry out a carefully documented therapeutic series with hospital patients to see if these new specifications provided an adequate safeguard to permit the release of bacitracin for general use by physicians without the limitation "for hospital use only," pre viously required It was decided to include in this series five patients treated with each of 12 different lots of bacitracin, four lots being provided by each of the three producers, for a total of 60 patients This study. Was reported in 1953 and convinced the Food and Drug Administration officials that systemic bacitracin is safe

These clinical results were confirmed at the same time by a laboratory study on the toxicity of bacitracin in rats. This study was carried out simultaneously in the Food and Drug Administration laboratories, in the laboratories of each of the three manufacturers of bacitracin, and in the Surgical Bacteriology Laboratory at Columbia University Doses were given approximating the maximum doses used clinically and repeated in amounts five times and 10 times that dose. The results were essentially the same in all five laboratories with the dose corresponding to that generally administered in treatment, no significant kidney changes were produced. With the fivefold and tenfold dosage, there was microscopic evidence of injury, but it was obvious that the pathologic changes were reversible and reparable.

Benemid (brand of probenecid) was used in the only death reported and attributed to bacitracin in a desperately sick endo carditis patient who had failed to respond to other measures. In the management of this patient the precautions recommended in the instructions (given below) were not observed, and although there was an alarming decrease in urinary output on the third day of therapy, bacitracin was continued for three more days, during which time the excretion of the retained drug was prevented by the benemid blockage in the kidneys. The action of the bacitracin in contact with the kidney epithelium

EXPLANATION FOR DIFFERENCE IN TOYICITY

Recently Codington brought forward an explanation for the difference in toxicity of different lots of bacitracin Craig and

(as indicated by an overnight laboratory test) the response will he prompt and favorable in a very high percentage of cases

Bacitracin for systemic use should be available to all physicians for possible use in patients with infections caused by susceptible organisms. It should not be used simply as a last resort after everything else has failed The instructions as outlined should be closely followed Fluid intake and urinary outnut should be measured daily while systemic bacitracin is being administered Benemid (probenecid) should never be used in conjunction with bacitracin

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CONGENITAL ANOMALIES OF THE FSOPHAGUS

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A GENERAL knowledge of congenital defects of the esoph agus is essential, especially for the general physician, the pediatrician, and the surgeon Familianty with the diagnosis and treatment of these anomalies would result in earlier operations and the survival of many more infants

Much of the interest in this subject has been stimulated by Haight and Towsley 1. 2 who have pioneered many of the surgical developments in these conditions

A workable classification of congenital anomalies of the esoph agus, adapted from Feldman, Palmer, and Potts and illustrated in figures 1 through 10, includes absence or atresia of the esoph agus without fistula, atresia of the esophagus with tracheoesophageal fistula fistula without other abnormalities such congenital conditions as stenosis shortness and web of the esophagus, duplications of the esophagus and neurogenic abnormalities such as chalasia and achalasia

Except for absence of the entire esophagus and congenital web of the esophagus, which are exceedingly rare conditions and of no practical significance these anomalies will be briefly discussed individually

ATRESIA OF THE ESOPHAGUS WITHOUT FISTULA

Atresia of the esophagus is relatively infrequent when compared with the number of cases of atresia with fistula that are observed in this condition both segments of the esophagus end blindly (fig. 2) There is no sexual predilection in this anomaly From birth these infants cough, choke, and become temporarily cyanotic whenever they are fed or attempt to swallow because the material has no place to go other than to be aspirated into the trachea. Therefore, aspiration pneumonitis is a frequent occur rence. The presence of other congenital anomalies along with this condition is not unusual. Roentgenograms of the chest will often show an area of pneumonitis or atelectasis, while those of the abdomen reveal no gas in the bowel. The absence of air in

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the gut is very suggestive that no fistula exists but does not absolutely prove the absence of such a communication One must be aware of the fact that a few bubbles of gas in the colon could have been placed there by the insertion of a rectal tube or the giving of an enema. The diagnosis can be further confirmed by passing a small catheter into the esophagus until it meets an obstruction. Then about 1 ml. of lipicold (not banum) is introduced which outlines the upper segment of the esophagus well. Procautions must be taken that the child does not aspirate the oil into the lungs for this may lead to the erroneous diagnosis of a tracheoesophagus listula.

The earlier the diagnosis is made and the earlier surgical treatment is instituted the better the prognesis Primary anastemests of the two blind pouches is seldom possible because the distance between the two segments is too great and the majority of infants will not be in good enough condition to tolerate such a long major procedure. These children's lives can be saved by a gastrostomy and a cervical esophagostomy. When the child is four or five years of age an intratheracic esophagus constructed of jojunum or the transplantation of the stomach intratheracical by with anas tomosis to the upper end of the esophagus can be considered.

If the child's condution is good when first examined the stom ach may be mobilized into the right side of chest. A primary analtomosis is then made between the esophageal segments. There are a number of advantages and disadvantages to this procedure and one must be cognizant of these before undertaking the operation

ATRESIA WITH TRACHEOESOPHAGEAL FISTULA

Atresia of the esophagus with tracheoesophageal fistula is the most common congenital anomaly of the esophagus The anatomic variations are shown in figure 3 the most common combination being that depicted in figure 3B The diagnosis is not difficult The accumulation of unusual amounts of mucus in the pharynx producing signs of respiratory obstruction should make one sus picious Furthermore the regurgitation of formula attacks of choking dyspnea and cyanosis while feeding are characteristic The inability to pass a catheter into the stomach confirms the diagnosis of esophageal obstruction but roentgenograms are necessary to determine the exact nature of the anomaly Pulmon ary atelectasis or aspiration pneumonitis particularly of the right upper lobe is frequently seen. The presence of extra esophageal congenital defects is not unusual. The introduction of 1 ml of lipsodol through the catheter will demonstrate the type of anomaly present. The presence of air in the gastrointestinal tract of infants with this condition indicates a fistulous connection between the trachea or bronchus and the lower esophagus

These patients cannot survive without surgical correction. The operation consists of either an extrapleural or transpleural approach to the anomalous structures through a right parascapu lar incision. The tracheoesophageal fistula is closed and an end to-end anastomosis of the two esophageal segments is per formed. About two thirds of the patients will survive operation. Some of these infants will develop a small structure at the site of anastomosis which usually will respond to dilatations.

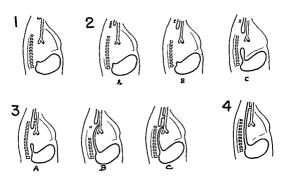


Figure 1 Absence of the entire esophagus. Figure 2 Atresta of the esophagus w thout fistula (A) At esta of the entire o gan with a residual fibrous cord connecting the bypopharynx and the stomach. (B) Small cul de-sac representing the cervical esophagus without further evidence of the organ (C). The proximal and is tail segments end as blind pouches which are joined by a fibrous cord. Fig re 3 Atresta of the esophagus with t acheeosophageal fistula (A). The fistula communicates with the proximal pouch, the lower end s blind. (B) The fistula communicates with the distal pouch the upper end is blind. (C) Both ends of the esophagus a e connected with the trachea. Figure 4 F tula without other esophagual abordalities.

CONGENITAL TRACHEOESOPHAGEAL FISTULA WITHOUT ATRESIA

Congenital tracheoesophageal fistila without atresia occurs infrequently and has been seen only five times at this hospital. An important fact which has previously received no comment in the literature is that the majority of these tracheoesophageal fistilas occur 2 cm or higher above the bifurcation. This is in contrast to tracheoesophageal fistilas associated with atresia, for most of these are within 2 cm of the coryna. About one third of the fistilas occuring without atresia are near the level of the jugular notch or above (fig. 4). This is most important,

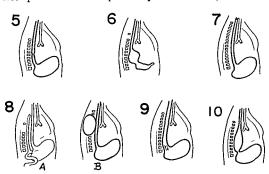
for the e at or above the second dersal vertebra should be anproached through a cervical incisior and not through the chest. The signs and symptoms vary depending largely on the size of the firtula A large fistula produces symptoms similar to the e observed in congenital atresia with fistula If the fistula is mall the child may maintain a good nutritional status and will cough only when taking fluids or when placed in the prone position Such a child is often hospitalized many times for recurrent bouts of pneumonity Roentgen examinations are essential to establish the diagnosis and to determine the exact level of the fistula. The treatment, of course is division of the fi tula and closure of the divided ends. A cervical incision is used for a fixula at or above the level of the second thoracic intervertebral space. A right thoracotomy is the approach for lesions below this level

CONGENITAL STENOSIS

In our small series the majority of cases of congenital stenosis of the esophagus occurred in male children. The onset of symp toms varied but about 60 percent of the patients showed evidence of obstruction before the age of 15 days. This is in contrast to the experience of Holinger and associates who had noted symp toms to appear for the first time after the age of five months Most of these children are not seen in the hospital until they are three years of age or older They prefer fluids to olids because the latter make them vomit. They eat slowly and masucate their food well Vomiting of undigested food is usually effortless and not projectile An esophogram confirms the diagnosis The stenotic area will be seen near the junction of the middle and lover third of the esophagus (fig 5) A small hiatus hemia frequently ob erved with this lesion is believed to be acquired not due to an associated congenitally short esophagus as suggested by helly Esophagoscopy is essential for this will determine the exact nature of the stenotic area and the degree of esophagitis present. The treatment should consi t of five or six dilatations if mentgenograms and esophagoscopy indicate that the stenotic area might yield to such therapy If the stenosis recurs after such therapy the lesion should be excised and the escohagus reap proximated by an end to-end anas tomosis

CONGENITALLY SHORT ESOPHAGUS

The congenitally short esophagus is exceedingly rare and is seldom troublesome in those infants and children in whom it is present. Most of the cases which are called a congenitally short escohagus are acquired When symptoms do occur they result from such complications as pentic ulceration esophagitis and stric ture formation therefore the symptoms may be vomiting dyspnea retrostemal pain hematemesis and melena. A roentgenogram after harum will demonstrate the esophagus to be short and the stomach will often appear pyramidal in shape (fig 6) There is no agreement as to the treatment in this condition Simple procedures such as a bland diet, dilatations, or a phrenemphravis should be tined first. If these are not successful, the extensive operative procedure of mobilizing practically the entire esophagus so that the stomach may be replaced in the abdomen should be done the should be recognized that if no treatment is instituted most of these patients will develop the complications already mentioned



F gure 5 Congenital stenosis of the esophagus Figure 6. Congenitally short esophagus. Figure 7 Congenital web of the esophagus Figure 8 Duplica t ons of esophagus (A) Duplication of intestinal orign R) Cyst of the esophagus Figure 9 Chalasia. Relaxat on of the cardio-esophagual junct on so fluid may eadily pass in either direct on Figure 10 Achalasia Sharp pointed narroung at the esophagogastric junction with dilatation above it.

DUPLICATION OF THE ESOPHAGUS

Most duplications of the esophagus are cystic structures and are either intramural or extramural (fig 8B), the latter being more common Rarely, one finds that the duplication is of intestinal origin (fig 8A). The cyst is extrapleural infrequently, its lumen communicates with the lumen of the esophagus. The symptoms are variable but are usually of a respiratory nature such as dyspinea, cyanosis, or coughing. The patient may also have dysphagus, vomiting and pain in the chest. The cystis may produce no symptoms at all. The majority of these cysts protrude into the right hemithorax and occupy the superior portion of the posterior mediastinum. Roentgenologically these duplications not only produce a round homogeneous shadow posteriorly but are frequently as sociated with congenital malformations of the spine, especially

scolosis and hemivertebra. The treatment of these lesions is transpleural excision

CHALASIA

Chalasia refers to persistent relaxation at the cardio esophag eal junction and is of equal frequency in males and females Vomiting the main symptom occurs about 10 days after birth and will become progressively worse if untreated The child is found to regurgitate most often when he is placed on his back Dehy dration and aspiration pneumonitis are frequent sequelae Roentcon studies are essential to establish the diagnosis. The banum is seen to go up from the stomach into the esophagus on inspira tion when pressure a applied to the abdomen On expiration the barrum may come up into the mouth go back into the stomach or both (fig 9) Treatment consists of keeping the child in the up right position for 30 minutes or so after eating. If symptoms are severe he may have to be kept upright day and night. Usually in three or four weeks the condition corrects itself

ACHALASIA

The sex incidence of this condition and the question of its ongon whether congenital or acquired are still in dispute. In children the main symptom is vomiting while in adults dysphagia retrostemal discomfort, and regurgitation are the complaints Mal nutrition is seldom seen in adult patients but is frequent in chil dren Pulmonary complications such as lung absces and aspira tion pneumonitis are not infrequent. Roentgenograms establish the diagnosis Routine posteroantenor and lateral chest films often will show a distended esophagus filled with food and fluid (fig 10) The air fluid level should not be confused with a pleural effusion A roentgenogram after tanum reveals a dilated esoph agus either fusiform flask or sigmoid-shaped and a shap pointed narrowing at the esophagogastric junction Esophagoscopy is seldom necessary for the diagnosis of cardiospasm in children Treatment with atropine nitrites or other antispasmotics has had generally poor results except in patients with minimal or early stages of the condition These drugs can be tried for a week or so but if there is no response dilatations should be attempted. If this does not relieve the condition an extramucosal esophagocardioriyotomy should be done shortly after before secondary changes in the esophagus progress

SUMMARY

The more common congenital anomalies of the esophagus and their diagnosis and treatment have been described in order to acquaint the practitioner with the pertinent facts of each Such knowledge is important to early and proper diagnosis so that surgical treatment can be instituted early and the mortality and morbidity resulting from these conditions decreased.

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RHODE ISLAND COMMENDS CAPT JOHN L ENYART (MC) USN

Capt John L Enyart (MC) USN and the staff of the U S Naval Hospital Newport were honored by a resolution passed by the General Assembly of the State of Rhode Island on IG March 1955 The resolution reads as follows "Commending the commanding officer Captain John Leslie Enyart (MC) United States Navy and the personnel at the United States Naval Hospital at Newport Rhode Island for precision action in coordinating the rescue work when explosion at sea upon the U S. S. Bennington last May proved that efficient organization is essential to life saving

BLOOD GROUPING DISCREPANCIES

ALBERT M RICHMOND Col l MC USA FRANK W CHORPENNING L ut na t C l l, MSC USA JOHN W MOOSE F tL ut na t, MSC USA GEORGE B EDMONSON F tL t t MSC USAR

WO DIFFERENT blood group determinations for the same person have not been uncommon yet it is well establish ed that the blood group of an individual does not change The many likely sources of error have been stressed repeatedly These errors are undoubtedly accentuated when mass blood groupings are performed by short-cut methods and when many different Ishoratories employing different technics and antiserums are involved. It has long been realized that such a situation occurs in the armed services and in certain other organizations such as those for civil defense In spite of this a search of the literature vielded only two critical studies of the extent of such misgroup-The more recent of these was a small restricted series Apparently no organized program exists for searching out and correcting errors in grouping as reflected on identification tags and medical records. In the armed services there have been many local efforts in this direction but the application of such studies to standardization of technics has been less than could be desired

In the interests of assessing the gravity of the situation and suggesting corrective measures a broader study using the most modern technics and antiserums seemed indicated Because the blood bank of this laboratory serves a large area and its donor source embraces both Army and Air Force units we have had an opportunity to make such a study

SELECTION OF THE STUDY SERIES

For purposes of the study it was necessary that the senes consist of a large group of American soldiers and airmen that nearly complete coverage of the group be attained and that the operation of other factors be essentially random. The only persons excluded were those whose blood group had already been rechecked by our blood bank. Units were selected at random and almost all personnel of the units were examined. In all °050 persons in 27 different military units were studied. The great majority of these were young men recently inducted into service from wide.

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spread American sources In the main blood group records on these men depended on tests performed at induction stations and reception centers where only a simple slide technic had been employed in mass grouping. An undetermined but undoubtedly very small number had been subjected to confirmatory grouping prior to this study.

METHODS

A mobile team visited each unit at a predetermined time and collected venous blood from individual members as scheduled. A roster was prepared at this time by our personnel and a number assigned each person who was then given a tube bearing the same number in which his blood specimen was collected. At the same time the individual sidentification tags and immunization register (Form 8-117) were examined and blood group data from them recorded on the roster. The blood specimens and roster were taken to our laboratory where grouping and typing tests were performed

Each specimen was examined by the ABO blood group slide test, backtyping* technic the slide test for Ph typing and the Rh modified tube test. The ABO blood group slide and back typing procedures were performed by different technicians A test for Rho variants (Du) employing Coombs serum was performed on all Rh negative Negroids and Mongoloids except for the first 474 persons examined

The ABO blood group slide tests were performed by placing a small drop of blood on a microslide adding a large drop of Nation al Institute of Health approved ant A or ant B grouping serum, and mixing thoroughly with an applicator stick. Cell concentrations approximated 10 percent. Readings were made from three to five minutes after incubation with occasional tilting of the slide, and negative slides were observed after 15 minutes before being discarded Results were entered on the roster

Backtyping was done by placing 0.2 ml of the inactivated serum to be tested in a small tube and adding one drop of a known two percent cell suspension. Then the mixture was shaken thoroughly and centrifuged for two minutes at 150 g (about 900 r p m in our centrifuge), after which the cells were resuspended gently and observed for agglutination.

All serums were tested against both group A, th(cde) cells and group B rh(cde) cells in this manner in the event results of the ABO blood group slide test and the backtyping did not agree a tube test also was performed and the foregoing tests were repeated. This procedure always resulted in satisfactory resolution of any discrepancy.

In blood typing the unknown ells re typed with known erum but in backtyping unknown rum is typ d with known cells

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The Rh factor slide test was performed with high titered pro tem fortified incomplete type anti Rh (D) typing serums which were specifically recommended for the slide test and had been approved by the National Institute of Health All tests were done by placing two drops of a 40 to 50 percent fresh cell suspension in homologous serum on a microslide adding a drop of antiserum and incubating on an illuminated warming box for about two min utes The box maintained surface temperatures on the glass plate from 40 to 45 C resulting in an estimated incubation temperature of about 37 to 39 C Slides were tilted back and forth during incu bation and observed for the presence of agglutination. If the blood was positive this usually occurred in less than one minute. If no agglutination appeared slides were kept under observation until drying began to interfere

Performance of the modified tube test for the presence of Rh.(D) consisted of placing one drop of typing serum in a 12 by 75 mm tube and adding two drops of a cell suspension of about 2 5 per cent Then mixing thoroughly incubating in a water bath at 37 C for 15 minutes and centrifuging at 150 g (900 r p m) from one to two minutes Positive agglutination determinations were made by observation with the naked eve and negative results were checked microscopically

The procedure for the Du test was identical with that described in the pamphlet accompanying the reagent (antihuman serum for the

All results were entered on the roster which was then filed pending analysis at completion of the study

RESULTS

Of the 2 050 persons examined during the study 180 or 8 8 per cent were found to have a blood group different from that recorded on their identification tags. These were believed to be original errors as distinct from errors in our testing because of the careful repeat testing employed in this study and because our observ ed error during this same period was less than 0 012 percent. This incidence of error in our laboratory was established by checking the agreement of slide and tube testing with backtyping and with receat testing

In each blood group the percentage of persons whose blood was misclassified is given in the last column of table 1 It can be seen that the highest proportion of misclassifications occurred in those having group AB blood followed by those having group B or A blood The lowest proportion of misclassifications occurred in those having group O blood

On the other hand, the largest number of classification errors occurred in those with group A blood, and the remainder of the errors were distributed about equally among those with the other three blood groups. This same phenomenon was observed by one of us (A M R) in a similar but unpublished study previously conducted in the Fourth Army area in the United States.

TABLE 1 Discrepancies between true blood group and recorded group

True blood group Criginally recorded group Number Correct Number Correct Number Total Crors within group (percent)	******	* Distripant				
Subtotal 693 91 784 116 B B C C C C C C C C C C C C C C C C C	blood	recorded		ı j	Total	within group
B B O 191 20 20 20 20 20 20 20 20 20 20 20 20 20	A	O B	693	12	76 12	
O	Subtotal	í	693	91	784	116
O O O P34 P34 P34 P34 P34 P34 P34 P35 P34 P35 P34 P35 P34 P35 P35 P35 P35 P35 P35 P35 P35 P35 P35	В	O A	191	20 9 3	20	
O O O 934 19 19 10 10 10 10 10 10 10 10 10 10 10 10 10	Subtotal	i	191	32	223	14 4
AB AB 52 13 13 13 13 15 10 10 10 10 10 10 10 10 10 10 10 10 10		AB	934	10	19 10	
A 13 13 10 10 0 3 5 5 btotal 52 26 78 33 3	Subtotal		934	31	965	3 2
	AB	A B	52	10	13 10	
T tal 1 870 180 2 050 8 8	S btotal		52	26	78	33 3
	T tal		1 870	180	2 050	8 8

Bdn e of 2050 pron test din ou laboratory a decompar dwith the grup of don the identification tag

A determination as to what proportion of the observed grouping errors were due to clerical mistakes would be of great value Such a mistake, once made is difficult to trace. It was possible to examine the records of persons in this study for clerical discrepancies between the information on the register and on the tag. There were 10 such discrepancies, five appearing to be errors on the tag and five on the register. Those could be expected to repre-

sent only a portion of the total clenical error because many would have been previously corrected and errors made on both records could not be detected

TABLE 2. Dz banc b tu en tru Rb typ and codd typ

Group	Tru Rh typ	O ginally re ord d Rh typ	A mber ferro
0	-	-	6 5
S btot 1		_	11
٨	_	-	5 I
Subt tal			6
В	-		1
S bt tal			1
T ta!			18
		Rh f or nly	
Rh typ	R ddtyp	↑ mbe f rror	Per t ro
Rh g Rh pos	Rh pos Rh g	11 7	

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T ral

Because of the practice of performing Rh typing within the Air Force these data also were collected. The Rh type was included in the records of 956 members of the study series (2 050) Among these differences between the recorded type and our results occurred in 18 instances or seven percent. These errors had no correlation with the grouping errors but rather the greatest in cidence was correlated with the group showing the greatest frequency (Group O) The distribution of error is shown in table 2. The sample is of insufficient size to determine the incidence of any pecific kind of discrepancy

DISCUSSION

The extent of blood grouping errors in Army and Air Force troops can best be assessed by examining the data recorded on identifi

cation tags and ascertaining the distribution of error among the various blood groups. The advisability of having the blood group recorded on the identification tag is not within the scope of this study, but if it is, the correct blood group obviously should be recorded.

If the percentage of errors were reasonably low, or if properly selected universal donor blood were to be given the current situ ation as reflected by this study would be of little importance Because, however, about one in every 10 persons has an erroneous entry on his identification tag (table 1), and there is no assur ance that universal donor blood always will be available in sufficient quantities, definite steps should be taken to correct the situation

TABLE 3 Incidence of blood g oup ng errors compa ed w th the frequency of th group

Blood group	Frequency	Number o	of errors
Brood group	(percent)	Observed	Expected
Α.	38 2	91	68 8
В	10 9	32	196
Ō	47 1	31	848
AB	3 8	26	68
otal		180	180 0
x ² = 103 26			

Based on the correct percentage distribution (frequency) of blood groups in the entire series (2 050) $\,$

If the factors governing misclassification were operating in the same manner regardless of the true blood group involved one would expect the 180 misclassifications to have been distributed among all blood groups in the same proportion as correct classifications were distributed. The observed and expected distributions are presented in table 3. Applying the chi square (χ^2) test to this data, a value of 103.26 is obtained. With three degrees of freedom, this indicates that there is little probability of obtaining the observed distribution of error among the various blood groups due to chance alone, and that causes other than ran dom ones are responsible for the observed difference. Further misclassifications within a group have not been distributed uniformly among the other three groups. For example, of the 91 per sons with group A blood misclassified, 76 were now assigned to group O, 12 to group B, and three to group AB. Were the misgroup ing merely a matter of chance, it would be expected that the mis-

classified persons would have been assigned to groups as shown in table 4 Again the values of x indicate there is little likeli hood that many of the grouping errors were due to the same random causes such as clerical errors Undoubtedly careless observation and clencal mistakes contribute to the total error because the only way that a true group A blood could be classified as group B blood would be if cells bearing the A agglutinogen failed to agglu tinate with anti A grouping serum while simultaneously yielding false agglutnation with ant B grouping serum. This is a rather remote probability. Including both groups A and B a total of 21 errors could belong in this category which is 11.7 percent of the total erms observed

Far fewer errors occurred in the classification of those with group O blood (table 3) than would be expected from a chance distribution of errors (observed 31, expected 84 8) while the reverse is true in those with the other three blood groups. The fact, however that some errors in classification of those with group O blood did occur requires exploration of the possible causes Because the identification of blood as belonging to group O is dependent on the absence of agglutination misclassification of those with group O blood must be attributed to false agglutin ation or clerical error. The latter especially if lower case letters (a and o) were used either in marking slides or in recording results could cause a correctly grouped O blood to be recorded as an A or vice versa. Clerical errors involving lower case a and o appear to be negligible because if there were many errors of this sort one would expect to find a significantly higher propor tion of group A blood samples than of group B blood samples misclassified as group O Although the proportion of group A samples was greater than that of group B, the difference is not significant Hence misclassification of group O blood samples must be due principally to false agglutination

Agglutination or what appears to be agglutination of group O blood may occur due to autoagglutination bacterial contamination rouleaux formation or clotting thus causing a true group O blood to be identified and recorded as group A B or AB blood All of these causes could have been involved and there is no evidence definitely pointing to any particular one It seems un likely that bacteriogenic agglutination could have been a signif icant factor because blood samples were fresh and antiserums were used up rapidly and not allowed to become old There is a theoretic reason to suspect clotting because mass methods use unclotted peripheral blood without adding an anticoagulant. Also these preparations are prone to drying

It is seen in table 3 that failure to detect agglutination occurred much more frequently than would have been expected on the basis

of chance This fact alone is of importance in arriving at appropriate recommendations for the future reduction of mass grouping errors. It becomes clear that a greater number of the errors were due to failure to observe agglutination than were due to all other causes together. There were 76 group A bloods and 20 group B bloods recorded as group 0, in addition to which 26 group AB bloods were misclassified, making a total of 122 errors (67.7 percent) attributable to failure to detect agglutination.

TABLE 4 Incidence of blood grouping erro s w thin blood groups

True	O gm lly	Number	of Err es	_ \ x ²
blood gro P	rec d d group	Observed	Exp cted	1
٨	o B	76 12	30 4 30 3	104.05
	АВ	3	30 3	
Total		91	91 0	
В	0	20	10 7 10 7	11.00
	A AB	9	10 6	13 80
Total		32	32 0	
0	Λ	19 10	10 4 10 3	
	B AB	2	10 3	13 81
Total		31	31 0	
AB	٨	13	8 7	
	B O	10 3	8 7 8 6	5 97
T t l		26	26 0	

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It is evident, therefore, that a very large proportion of the errors currently being encountered could be prevented if the factors which inhibit agglutination were eliminated. These are hemolysis, use of weak antiserums, and insufficient cell contact? Because the incidence of hemolysis is not high and because actual tests in this laboratory have shown that antiserums currently used in the armed services are very potent, it is believed that lack of sufficient cell contact is the most likely cause. In our laboratory

we have observed that failure to secure adequate cell contact by frequent tilting of the slide and by a sufficiently long period of incubation can result in agglutination being missed. A knowledge of the mass methods usually employed coupled with the foregoing leads us to conclude that most of the errors observed were likely caused by improper technic such as too rapid reading or insufficient titing of the slide A great part of this is inherent in the use of mass technics and poorly trained technicians. Therefore modification of the technic to assure more careful incubation and better indoctrination of technicians are essential if the situ ation is to be improved Another approach would be to initiate a program of repeat testing

SUMMARY

In order to determine the extent of blood grouping errors resulting from the employment of mass technics the blood of 2 050 American soldiers and airmen who were selected essentially at random was examined The blood groups were determined by carefully confirmed testing and the results compared with previously prepared records. Discrepancies between our results and those previously recorded occurred in 180 instances or 8.8 percent.

Most of the grouping errors (67 7 percent) seemed to be due to failure to observe agglutination with potent specific antiserums even though the agglutinogen was later proved to have been present It is suggested that this was probably due to too rapid or careless reading and insufficient tilting of the slide

It was nos able to examine the blood of only 256 persons for Rh type discrepancies because such information had been in cluded in the records of only that number Of these 18 (seven percent) showed recorded errors in Rh type

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FREE AMINO ACIDS IN THE BLOOD AND ORGANS OF MICE IN SHOCK

VICTOR ROSS Ph D DAN H MOORE Ph D

S EVERAL investigators have demonstrated that a rise in total amino acid nitrogen occurs in blood following induction of shock by hemorrhage, 1-3 by scalding -7 and by clamping, and that the rise is greater with increasing seventy of the state of shock 2-3 7. This has been ascribed to increased protein break down in the peripheral tissues and a failure of the liver, during shock, to deaminate and to assimilate amino acids 3 While it has been observed that the total amino acid mittogen in the liver and muscle also increases during shock (from hemorrhage) 3 study of the individual amino acids in the tissues of shocked animals appears to have been limited to the blood of the scalded rat. 14

The present investigation was concerned with the amino acids present in several organs, as well as in blood of mice in a state of shock produced by scalding Quantitative measurements were not made, the primary interest being whether the tissues of scalded mice would or would not contain amino acids not present in the corresponding tissues of normal mice as revealed by chromatographic examination.

METHODS

Groups of C57 black mice weighing 25 grams each and up to 25 in number in each expenient, were fasted 20 hours and anes thetized with ether Both hind legs and thighs were submerged in water at 70°C for 10 seconds and the animals then held at 35°C for two hours The mortality was 50 to 60 percent. All survivors were in a state of severe shock. After anesthetization the blood was collected and allowed to clot, the organs were placed in beakers held in a mixture of alcohol (ethanol) and solid carbon dioxide Control mice were treated similarly except for the 70°C and 35°C exposures Only two to three drops of blood

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were obtained from each shocked animal compared with nine to 11 drops from each control.

For the extraction of amino acids serum was diluted with four volumes of absolute alcohol let stand over night in the ice box, and centifuged Weighed quantities of dired tissues were extracted with anhydrous ether followed by anhydrous alcohol to remove lipids, Arino acids were then extracted by grinding in 80 percent alcohol While some loss may have occurred in the course of removing lipids these are assumed to have been alike for control and treated animals tissues because the operations were identical

Two-dimensional chromatograms were employed according to adaptation of the method of Consden and associates 13 the equivalent of 0 10 ml of serum and of 75 mg of dry tissue being spotted Dent's map of spots was used to help identify the nots and in addition the following compounds singly or in groups, were examined by themselves or after being added to tissue extracts in order to make identification more certain apartic and glutamic acids glycine senne alanine asparagin glutamine leucine valine tyrosine tryptophan phenylalanine histidine histamine glutathione proline carnosine lysine hydroxylysine arginine threonine diaminopimelic acid taurine beta alanine and ornithine All operations from spotting to final examination of the paper chromatograms were carried out simultaneously for control and experimental extracts of a given tissue thus facilitating an estimate to be made of the intensities of the colored areas obtained by spraying with ninhydrin. These estimates are not to be considered as possessing quantitative accuracy they are included to supplement the qualitative data howing the particular amino acids observed to be present in a given tissue and to illustrate a rise in concentration in a number of them following scalding

RESULTS

Table 1 lists the amino acids and related compounds which were found in the various extracts. The estimated intensities are the averages of six experiments in the case of serum and of three in the case of the other tissues. Additional experiments were done but were not included because one or more amino acids had been added as markers their inclusion would not after the results.

To copy ten or get on on f blood from thre group f lided ance wa 69 0 104 5, and 83.4 mg, pe 100 all to renge val f the control mice w 47 lung p 100 all with val diffring by an rethan 15 mg from the reg

^{*}Survised by Dr Jam R. V ge fth Rock fell in to fo Med cal Re arch d Dr. L. D. V gh f Sharp and Dohm pects ely

TABLE 1 Free amino acids in serum and organs of mice

	Serum	E	Spleen	e .	Liver	.	Ardney	cy	Brain	Ē	Muscle	2	7.	Lung
	U	S	U	S	U	S	O	o,	U	S	Ų	s.	J	s
Alanine	4	9	-	_	ی	9	~	٥	~	~	~	~	4	4
Alpha amino butyric acid			×	×	7	2	-	7	₹	⊽				
Arenton			2	٣					7	7	_	7		
Aspartic acid	-	-	~	v	7	3	~	~	~	~	3	3	3	٣
Bet -alanine			×	×	-	2	_	-						
Carnosine											7	-		
Ethanolaminephosphoric ester			~	9	7	7	×	×	•		~	~	4	~
Gamma aminobutyric acid									7	7				
Glutamic Acid	~	5	9	9	~	٠	~	~	9	~	~	~	9	~
Glutamine	~	v	4	~					4	3	4	~	3	٣
Glutathlone			×		-	-								
Clycine	3	3	Ś	9	^	~	٥	~	~	'n	4	4	'n	~
Leucine	3	4	9	9	۳	4	~	~	~	~	7	4	-	-

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Serum Tyrosine was absent from the chromatograms of normal mice and present in those from the scalded animals. All the amino acids present in serum, namely aspartic and glutamic acids, gly cine, senne, alanine, lysine leucine valine, taunne, and gluta mine, were present in all the other tissues as well, except that glutamine was absent from liver and Lidney

Spleen Glutathione was present irregularly in extracts of the spleen from control animals but was never seen in those from shocked mice a spot in the position of methionine sulfoxide* was always present in the former but irregularly in the latter Other compounds in addition to those detected in serum were threonine, tyrosine, arginine, proline, beta alanine, alpha aminobutyric acid ornithine and ethanolaminephosphoric ester The last yielded a spot in chromatograms of splenic extracts which was stronger than in that from any other organ

Liver Threonine, which appeared irregularly in extracts from control animals, was regularly present in those from scalded mice, while proline and omithine, which were not found in the control extracts, were detected irregularly in the experimental animals In addition to the compounds found in control serum threonine, tyrosine, beta alanine methionine sulfoxide, gluta thione, alpha aminobuty ric acid, and ethanolaminephosphoric ester were present in liver extracts

kidney The chromatograms of this organ extract from control and scalded mice were similar The compounds detected in control kidney tissue were the same as in control liver tissue ex cept that the former contained no glutathione and did contain proline Neither glutamine nor arginine could be demonstrated in kidney and liver extracts Except that arginine was also absent from lung extracts this was in contrast to all the other organs ex amined The absence of these two compounds may have been the result of strong arginase and glutaminase activity. The latter enzyme however is present in brain also and a spot for gluta mine was always present in chromatograms of this organ Argi nase activity should have been reflected in the appearance of ornithine but this acid was not found in kidney tissue from control or scalded mice nor in normal liver tissue, although it was pres on scaled mice Schwerin and co-workers' found 10 and 35 mg of glutamine per 100 grams of mouse kidney and liver, respectively, the quantity in the latter

our chr m t grams.

M th. ni ulf de wa probably formed from m thi nin during the potting open ton. Crumpler ad as cit (Crumpler H R Dent C. E Hartis H and W mll R G β- mino b tyre cid (α-m thyl β- lanta) ew amino- cd obta n d from human uri e Nature L d a 167 307-308 Feb. 1951) r ported finding a n w mino d & minor b tyre cid : the pos tion occup ed by m thi nine sulfoxid. It is po s bl ther fore th t the ew compound rath t than m thionine ulfoxid w s present

organ when calculated for that spotted in the present experiments should have been detected

Brain The chromatograms of control and shocked mice were qualitatively indistinguishable Besides the compounds detected in normal serum there were observed spots representing threonine, tyrosine arginine proline alpha aminobutyric acid, gamma aminobutyric acid and ethanolaminephosphoric ester

Leg Muscle The patterns of the two groups of animals were alike Besides the amino acids seen in serum chromatograms there were threonine tyrosine arginine proline methionine sul foxide ethanolaminephosphoric ester and camosine Carnosine exerts a depressor effect on blood pressure ' but it appears to play no role in shock because it was not found in the blood of scalded mice

Lung Tyrosine and threonine were absent in control extracts but appeared in those of scalded mice. Except for methionine sul foxide and ethanolaminephosphonic ester the extracts from control mice yielded the same chromatograms as those from serum this made the resemblance to serum greater than that in any other organ.

DISCUSSION

Only in the serum where tyrosine appeared and in the lung where both tyrosine and threenine were found in the shocked mice does there appear to have been a qualitative change in the free amino acid pattern following induction of shock. The meaning of these changes is not clear at this time. The simplest explanation may be that the concontration of these two amino acids had increased sufficiently to make detection with ninhydrin possible. This view receives support from the fact that there were a number of instances in which the concentrations of amino acids increased in the ussues of the shocked mice. An exception to this is the brain where in the case of six compounds the concentration decreased. No amino acid regularly present in control tissue was lacking in the corresponding tissue from scalded mice.

It is of interest that no spot, other than those representing glutamine and camosine present in chromatograms of unhydrolyzed specimens failed to appear after hydrolysis of the usue extracts from either the control or the scalded animals. Although ninhydrin does not detect all peptides the fact that there was also no evidence for intensification of the color of any spots (except as expected from the hydrolysis of glutamine and camosine) suggests that, if peptides soluble in 80 percent alcohol were present in the extracts they must have been so in very small amounts. This suggests that such compounds also do not play a part in the shock syndrome.

SUMMARY

Only in blood and lung extracts was there a qualitative change in the free amino acid paper chromatograms of scalded mice this consisted in the appearance of twrosine in the former, and of twrosine and threonine in the latter

In no case was an amino acid observed in the control animals tissues which failed to appear in the chromatogram of the corresponding tissue from scalded mice

Hydrolysis of the extracts provided no evidence for the presence of peptides in the extracts from control or shocked animals' tissues. It appears therefore that camosine and other peptides play no part in shock produced by scalding.

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MILITARY PSYCHIATRIC PROBLEMS IN PEACETIME

L EITINGER M D

M ILITARY psychiatric problems are so extensive that in a brief report one can only indicate the most important points of interest. I have therefore concentrated exclusively on concrete and simple problems encountered daily in the Norwegian military service and in this clinic.

Since the beginning of our military age responsible military leaders have made the reasonable demand that the men who were to bear the direct strain of battle and life in military service be in relatively satisfactory health Parallel with the building up of modern armies the medical selection system has also developed systematically Concentration has been on the soldiers physical soundness Although symptoms such as anxiety and panic were known in former times professional military men were primarily interested in I nowing whether or not the soldier had good feet and full movement of his fingers in order to fire a rifle. It did not occur to anyone to correlate these problems in selection board ex aminations. The very alarming number of cases of nervous break downs shell shock et cetera during two world wars made the problem exceedingly real it was only natural that ways of avoid ing these breakdowns were urgently sou, ht. Because psychiatric therapy was inadequate emphasis was placed on prevention as early as possible a e before service began This led in the first place to a more or less noncritical rejection of all recruits who showed even insignificant symptoms

It is not strange that such rigorous demands met with some essence especially after the war when it became evident that even the most select soldiers could experience breakdowns. In 1943 when the military services of the United States still rigorously rejected all recruits with the slightest indications of ner yous symptoms. Sigren pointed out that it was not only those who were already psychically strained who broke down but that the miliou—military life itself—played a big part both in a positive and negative direction. Since then American studies

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of the problem, such as made by Sharp, Alta, Egan, Chambers, Braceland and Menninger showed that too many recruits had been rejected who could have rendered valuable service in the military forces

In spite of this recognition, it is indeed unquestionable that a psychiatric opinion and appraisal at the selection board examina tions can be of great value. It is only necessary to be a bit cau tious concerning the standards set up

STANDARDS OF COMPARISON

Instead of trying to eliminate all those who in any way might become mentally ill during service, emphasis now is chiefly on the obviously unfit. Hamburg and associates examined 96 soldiers who were admitted to the psychiatric department in the course of their first 30 days of military service. By comparing these 96 with a group of soldiers who had at least one year of uninter rupted service significant differences concerning earlier sick nesses, especially of a psychiatric nature, and adjustment to the working life were discovered. This corresponds fairly well with my study in 1953 of 439 soldiers who were at the conclusion of their period of service without having had to apply for psychiatric assistance and 165 soldiers who either had been admitted to this clinic or had been examined in the outputient department (table 1)

As noted in table 1, there are quite distinct differences in the group with a positive family history (i.e. children who have not grown up with their parents—because of divorce or for some other reason, and children with parents from a rather difficult milieu—the father an alcoholic, et cetera) Furthermore we find differences when the difference concerns "positive premorbid personalities" (i.e. all who have had nervous disturbances as children or adolescents, registered by their sensitiveness, hyper sensitiveness or isolationistic and autistic tendencies), poor school marks, unstable working conditions, and perhaps some lack of social responsibilities (if one is willing to recognize children born out of wedlock as a proof of such weakness). Factors which are alike for both the examined groups are the person s place in the family, the parents occupation and the number of military punishments the person has received

SIGNIFICANCE OF PEACETIME ADJUSTMENT

Cavanagh and associates also came to similar conclusions. They compared a group of 242 military persons who (duting peace time conditions) completely failed in their work with 410 military persons without psychic or disciplinary difficulties. Those from the former group came from broken horses more often than those in the control group. The problem group had had several adjustment difficulties in school and working life and had, on an aver

age a lower intelligence quotient than the control group In spite of these undoubtable quantitative differences between the various groups examined the results hardly give any definite grounds on which to base a reliable selection procedure

TABLE 1

	.E 1	
Ft htry	N rmal mat sal (439 bj ts)	P bl m gro p (165 bj t)
	P t	P t
Ill g timat birth	2 9	3 6
H dtrypredispt	47	43 0
P to family hist ry	20 7	63 6
P to prem bidp malty	104	818
School d ff ult	2 1	15 1
Untabl wkg adus	68	37 5
H wing ligt mate bildre	06	2 4
N tp set tth 1 tr board	65	32 1
T tal	439	165

S reformlanaso f m

No one can in all earnestness demand that everyone liable to be called up for military service with positive symptoms of a dissipative damily life unstable working conditions or poor school marks for example shall be rejected and considered incompetent for military service. Neither should a candidate be rejected because he volunteers the information that he is sensitive and/or emotional. On the contrary one should uncoubtedly accept for service the subjects in whom one finds an accumulation of several factors likewise those with distinct nervous disturbances should be accepted but followed with the utmost care

Briefly to sum up the results one must acknowledge that the psychiatrists importance in the actual selection board conclusions (rejected or accepted) is not as great as originally supposed. The main point I want to clarify is that the major effort of preventive work should not be performed during the selection board sessions but at a later date that is during the military life of the individual serviceman

BASIC NEEDS V MILITARY DEVANDS

It is hardly necessary to stress the importance of satisfying the individual's biological and social needs. When it applies to the former, there has never been any doubt of their importance for the soldier's competence. Here I will call to mind the old Norwegian proverb that "no one becomes a hero who has no food and drink." When it comes to social requirements the realization of their importance for the individual's welfare has been consider ably more of a problem Without hurting anyone's feelings one can safely say that the military institutions never have been expecially famous for considering the individual's special capabilities and talents. This inflexibility in considering each person will undoubtedly lead to failure in satisfying specific social needs. This weakness can most certainly be the main cause for releasing or conditioning the outbreak of nervous disturbances.

From the previously mentioned examination of 604 soldiers, it was observed that a number of fairly important social requirements had been neglected by the military authorities

THE RECRUIT S VIEWPOINT

Let us focus our attention on the first impression of the armed services that a recruit gets his first day Only 19 of the 604 said that they had received a good first impression. More than one third of this group informed us that the attitude of officers and noncommissioned officers which was unsympathetic, was the main reason for this judgment. A similarly large number also reported that they had not received any explanation whatsoever concerning the meaning of military service or why they had to carry out the different orders. Of those who considered that they had received some sort of explanation, nearly 80 percent said that the briefing was insufficient because it usually only referred to the importance of strict military discipline or to the threat of punish ment.

Some understanding as to whether the servicemen believed that they had been justly or unjustly treated was obtained by determining their outlook on the punishment they had received and by evaluating answers to questions as to whether their sense of justice had been injured during service. The number who considered that the punishment was unfair ranged between a few up to two thirds in the different military services. Only about 10 per cent reported that their sense of justice had not been injured. The two things to which the solders reacted most strongly were (1) being disciplined by somebody who was not a neutral judge, and (2) being punished collectively for the wrongdoings of other persons.

RECOGNITION FOR GOOD DEEDS

Most of the servicemen reported that they were reprimanded when they made mistakes but never praised when they did things

well However most of them realized that too many compliments only did harm. At the same time they pointed out the poor psy chology in the fact that they were treated too harshly and severely in the first period of their recruit training when they were young timid and unsure During this particular period of elementary drill and weapon evercises a few compliments and words of encouragement would have meant a great deal to their morale and feelings and would have been of the presents importances.

Only from six to 30 percent of those examined (which varied within the different services) considered that the civilian population thought well of men in uniform The lack of social recognition was perhaps a great frustrating factor and appears to be a more serious problem than one would imagine from the very positive attitude that most of the newspapers seem to express

IMPORTANCE OF IOB SATISFACTION

One of the most important social factors is certainly one s satisfaction with one s own work For service personnel this problem is definitely greater than in a civilizan occupation because they find themselves in an organization where accomplish ment of the imposed work is compulsory. This situation implies a very serious frustration If in addition the work seems meaning less the dissatisfaction is naturally much worse to bear than under free conditions.

Our studies revealed the unpleasant facts that from 20 to 40 percent of the men were far from satisfied with their training from 10 to 60 percent were dissatisfied with the work they had to do and from 80 to 100 percent (which varied in the different services) believed that the time spent in uniform was too long in relation to what they actually learned

These examples of which one could name many rore il lustrate and sufficiently prove my thesis that the services do not consider seriously enough the importance of social well being and contentment.

INCIDENCE OF PSYCHIATRIC BREAKDOWNS

The number of psychiatric cases in the military services must be considered to have increased since 1945. This is first and foremost because of the longer compulsory service period and possibly also because of stricter classifications and more as signments by the selection board committee. This assertion might seem contrary to my claim that the psychiatrists have gathered insufficient evidence to eliminate candidates who might suffer a breakdown. This contradiction meanwhile seems apparent only because so many other absolutely necessary psychologic requirements—which are needed and lead to success in the service life—were lacking. A published work by lunt and associates

-which analyzes in detail 537 "marginal psychiatric cases" studied during the entire period of military service—is very con vincing. These men managed to complete their military service but during the whole time they were a somewhat greater liability for the medical service and the welfare and combatant officers than the average soldier.

It is here that I have to touch upon the crux of the problem Both the medical staff the members of the welfare organizations and, last but not least, the combatant officers who have daily contact with soldiers and sailors need a certain amount of mature experience understanding, and perhaps a little more of the right spirit and human touch to handle these somewhat different per sonalities in order to help them through their entire service period

Evident shortcomings on these important qualifications are shown by our material—the 165 military persons who were either admitted to the University s psychiatric clinic or were treated at the clinic soutpatient department.

TYPES OF PSYCHIC DISTURBANCES

The first thing one notices when studying the diagnoses of these patients is that victims of circumstances and depressing conditions are more frequently represented in this group than in a proportionate control group Neuroses and psychogenic disturbances constitute a good 60 percent of all diagnoses. The remain der—that is not even 40 percent—is divided among the other diagnoses which include psychopathies oligophrenias schizophrenias, epileptic disturbances, et cetera

Meanwhile more important for our purpose than the actual academic diagnostic classification is the question of whether the actual disturbances have been caused by conditioned by, or are unconnected with the military service. This grouping was under taken on the basis of a detailed study and judgment of the patients premorbid personality adjustment to school and working life the development of the illness and adjustment to military and/or civilian life after the conclusion of treatment.

Classification of a patient into one of these three categories was not always easy to perform In many instances there were strong objections against placing a patient in either the one or the other group. It is very difficult to decide the causes of psychi atric disturbances because numerous and very complex factors in a serious ensemble can produce mental dishatmony. Meanwhile the question of military service as grounds for psychic disturbances is of such great importance both psychiatrically and socially that I believed I was justified in undertaking this classification. This is only mentioned to point out that in each particular case I have honestly tried to come to a tenable conclusion

MILITARY SERVICE AS CAUSE OF MALADJUSTMENT

The first group : c the group in which the military service was the direct cause of psychiatric disturbances proved to be the smallest, comprising only 12 (73 percent) of all examined. Here are boys who have adjusted themselves well in school and work ing life and who have neither in childhood during adolescence nor in the beginning of their military service had difficulties of any kind. Because of a specific experience or erroneous employment a defect appeared in their psychologic resistance with the result that failure of adjustment and neurotic reactions became evident.

For practical purposes in military medicine and especially in the preventive field it is interesting to know what factors led to the breakdown of these 12 military persons With the reservations previously mentioned it can be maintained that two developed their depressive neuroses because of punishments which they considered extremely unjust. With six patients the problem of wrong employment was the main cause. Three thought that the officers uncomprehensive attitude was the cause of their difficulties while one apparently reacted to the civilians dismissing attitude in a (from his point of view) rather notorious garrison town

Concerning those patients in whom wrong employment had been the cause of the neuroses it was particularly interesting to follow them after the final treatment. Everything went well when the military authorities followed the clinic's advice concerning a change in employment. In cases where our advice was not taken the neuroses was accentuated and after a while the patient was discharged as inaccessible for therapy.

A typic I example for the first group i a 21 year old youth in the Navy who before the psychiatric examination and treatm in had had live disc plinary retributions for different offense. He was restless sleepless continuously at the doctors office could not concentrate was pin ng away and depressed. After being put into a new job he ac complish d his work well without once having to consult a physician or coming into conflict with his stuperiors.

Even if this group where one with relative certainty can assume the cause to be military conditioning is relatively small it shows with all desirable clarify that the treatment cannot only be purely psychiatric but that it must be combined with administrative effort on the part of the military

OTHER CAUSES OF MALADJUSTMENT

Group two (63 persons 2 e 38 2 percent) comprised men in whom military service was not considered to be the cause of the psychiatric disturbances under consideration. This group constituted more than one third of all examined and can be divided into

two main subgroups (1) the persons who should not have been en listed in the military service (mainly psychopathics and oligophrenics), and (2) persons in whom the developing factors had nothing to do with the military service but were mainly of a social or erotic nature. In addition there were a few cases of typical "endogenous" nature (schizophrenia and organic mental disturbances) where one must assume that the illness would have developed in dependent of the person concerned being in or out of the service

In itself, it is not surprising that soldiers also can have conscious or unconscious conflicts without any connection with the military service. For these conflicts the servicemen need, just as other patients, psychiatric treatment and guidance. Each case should be judged individually and a general recommendation to send the patients home cannot be considered a rational and adequate solution for all these illnesses of clear psychiatric nature

The last and undoubtedly most important group was made up of 90 military persons, i e 54 5 percent of those examined In this group we had, after examination of the case history, received the impression that the military service was only a contributing but still very important factor in producing the psychical disturbances Diagnostically we find here that more than two thirds of the examined are suffering from neuroses and psychogenic disturbances. The reason for failing to adjust themselves seems in all cases to have a direct bearing on the military life. The personalities injured were on the average predisposed because their characters were affected by autistic tendencies and the like Family disposition in the form of heredity and/or of a dislatmont ous home was also found to be over represented in this group

Of these 90, 34 were recommended to be discharged, 38 were retained in their service and 18, in whom the final decision was postponed were for the time being discharged and classified as temporarily unfit for service

IMPORTANCE OF ADMINISTRATIVE DISPOSITION

We found that in the first group the administrative authorities decisions with regard to employment were of great importance. The problem of correct assignment is even more significant with persons who are less capable of resistance. The administrative authorities should attempt to assist these cases with supporting and upholding psychotherapy, and with other positive efforts which each separate case indicates.

A typical case history of a patient concerns a seaman whose father was a drunkard and v hose mother died when he was six years of age. The father matried again but the stepmother also died when the boy was comparatively young. The patient developed a sensitive and emotional disposition with a tendency toward depression. During military

service he was obliged to marry and his wife continued to live with her parentis. He experienced a number of neurasthenic symptoms flee also complianced that his father now lived alone and that this would result in a complete alcoholic relapse. The patient believed that this also would be his fault. Fortunately it was possible to arrange for him to be posted near his father (and wife). The medical officer not only kept his eye on the patient but also on the father and at the same time he tried to help the family soc ally. The combined psycho and sociotherapy had a very good result not only for the effect on his military service but first and foremost for the patient is psychological health. (There is no doubt that a physician with less interest in the patient and his unit could not have accomplished the same results.)

Unfortunately there are numerous examples which prove that failure in the social medical service after psychiatric treatment results in the individual continuing to feel like a misfit as shown in the following case

The patient was born out of wedlock and grew up with his maternal grandmother. The mother was nervous and a cousin of hers was psy chotic. The patient himself was quiet reserved shy restrained and had difficulty in m kine firends.

He was called up for multary service where things went relatively well in the recruit school and at first when he was serving in the v c nity of his home. He was then assigned to another gatrison and in the course of four or five months he w s penalized eight times in most instances because he simply walked off. He was sent for psychiatric examination after nine months of service. He was then restless shy blushed when anyone so much as looked at him slept badly was frightened individually and the service and the service whether a change of duty or complete rele se from further military service. Neither of these ecomemendations w s followed On ing iring we learned that the pat ent was still in the sam post and that he spent most of his service time time behind bars.

CONCLUSIONS

What conclusions can be made from this rather meager material? In the first place the fact that there is so little material is nelf noteworthy It shows that only a few of all those who need psychiatric assistance are referred to specialists. In a study I made in 1950 of military persons who had been discharged because of psychiatric disturbances only about 20 percent of the men had been examined by specialists. This figure supports the necessity for more psychiatrists in the service

In the second place the material shows that a neurotic disturbance arising during military service does not necessarily lead to a decision of incompetence and therefore discharge In other words psychiatric examination and treatment can give quite a recruit-preserving result.

In the third place, we find that it is not sufficient only to treat the men in a hospital, consequently removed from the conflictdeveloping milieu, without also attempting to modify the milieu As a slogan and expressing matters to the extreme, I would say it thus It is of no avail to fit a man into military service if one does not also seriously attempt to fit the military service to the man

The latter is the military psychiatrists' most important problem prevention of neuropsychiatric disturbances. Some points which affect this question are mentioned briefly

The actual changeover from civilian to military life involves in itself many difficulties. This applies especially in a democratic society in which education stresses the development of the individual's freedom and his personal responsibilities. The atmosphere in and the whole construction of the military organization is contary to civilian life. This sudden change from a democratic to an authoritarian life pattern has most certainly a great influence on the soldiers mental life and health. It will, therefore be of the greatest importance for a satisfactory adjustment that it is made as humanely as possible. The necessity of strict military regulations (where they really are necessary) must be clarified that is explained to all military personnel.

This implies that all procedures, instructions regulations traditions et cetera should be given an inprejudiced review. Only those rules and regulations which are necessary for the smooth functioning of the military apparatus should be retained All others should—in the widest possible extent—be adjusted to fit the democratic spirit and the democratic mode of living which otherwise forms the basis of our social life. This requires that the officers interest in the questions which are related to the above-mentioned orbitems is stimulated.

RECOMMENDATIONS

I am well aware that this problem cannot be considered as a direct task psychiatrists should take upon themselves. But they should, on the grounds of their understanding of human reactions, endeavor to awaken the command authorities' interest in this fundamental recognition.

Our material shows that the effect of the military service on the human mind in peacetime also can be of such a serious nature that it must be regarded as a direct reason for the development of some emotional disturbances

Psychically well equipped and healthy persons seem to be able to manage the mental strains of the military service without

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becoming ill Nevertheless drawn out, inadequate treatment on the part of the superiors or a markedly absurd duty assignment can result in abnormal emotional reactions in presumably mentally sound persons. To a far greater extent we encounter the outbreak of mental illness in such individuals who have already had prior to their military service a character trait which disposes to neuropsychiatric disturbances or who in their upbringing have had exceedingly unsatisfactor, family relations.

The responsible authorities must so arrange the service life of recruits that they will be as little exposed as possible to serious strains which might cause mental illness to break out

Every medical officer is taught and must adhere to universally accepted principles of general hygiene Physicians are only avisers and to some degree they also supervise all preventive of forts with regard to illness (for example food shelter clothing training et cetters)

The preventive work in the mental hygiene field cannot be con centrated purely on the medical sector of military life. On the contrary it is first and foremost the combatant officers who have the daily contact with the soldiers. It is therefore these who first of all should partake actively in the preventive field of men tal hygiene. To get it started and understood a thorough and in tensive training of all officers is needed. The main stress is to be laid on knowledge concerning the human mind its variable vulnerabilities and its normal and abnormal reactions. The importance of the different factors which can cause the development of illness must be examined in detail with particular emphasis on the importance of sound occupation and placing in the right job which for most persons, is one of the primary conditions for thriving.

Medical officers on their part should also be aware of the enormous responsibility which rests on their shoulders and also of the importance an adequate treatment has both for the individual and for the service as a whole

Often the recently graduated physicians who must perform the greater part of the daily medical work in the military service cannot however be expected to have the necessary insight and experience in order to be able to undertake the double duty which today falls upon them $t \in t$ influence the combatant officers toward a more mentally hygienic minded attitude and treatment of their subordinates and to render the soldiers the necessary supporting psychotherapy in order to provent and humanely treat adulational difficulties.

Civilian psychiatrists lack the necessary insight into military problems and the daily contact with the combatant officers. It should, therefore, be required that the Medical Corps engage psychiatrists for the medical service who are especially in terested in working with the psychologic problems of military life and the adjustment problems of youths of military age. These medical specialists must also take on the education of the combatant officers in this indicated field of knowledge and at the same time conduct the necessary control of the young medical officers concerning prevention and treatment of psychiatric problems.

The question which arises in the end is how far we here in Norway, in a purely practical degree, have come with this new broken ground. We can say that so far we have done the first rough spade digging. We have been fortunate in obtaining the authorities' conviction as to the necessity of military psychiatric posts within each military command area. We have now also received a grant for a military psychiatric outpatient department at the Oslo Military Hospital. It is too early to say how these in stitutions will function in practice. But I believe that the positive view and understanding of military psychiatric problems which have been shown by our O. C. Medical Corps. our chief medical officers, and our university professors will help us to solve them all in a satisfactory manner.

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A TUMOR SERVICE IN A MILITARY HOSPITAL

CLIFFORD F STOREY Capt (MC) USN
HERBERT VOLK L t Comm d (MC) USNR

UMOR boards perform a useful purpose in the management of patients with malignant disease The conference system of arriving at decisions in matters of therapy is of proved ment with many advantages which far outweigh its possible disadvantages let in spite of these obvious assets a tumor board is not necessarily an immediate and inevitable success in a military hospital Physicians in the armed services no less than their civilian confreres are rugged individualists. They are inherently and justly opposed to the practice of medicine by committee When confronted with a tumor board order with tooth in it some look upon it as an invasion of their professional rights and as a disturbance of the normal physician-patient relationship As a well organized and properly run tumor board actually operates however these theoretically irritating factors are more apparent than real It becomes obvious that consultation with a variety of specialists even enforced consultation if you will is a real asset in patient management. The teaching value of a lively tumor conference is immediately apparent to all who attend The younger men frequently offer stimulating and helpful suggestions and they in turn profit by the discussion of the more experienced members of the conference

A superior type of tumor service does not burst into full bloom overnight not does it, like Topsy just grow On the contrary an efficient tumor service requires a concentrated effort on the part of the hospital staff and considerably in the way of physical facil titles and personnel.

PREREOUISITES

There are several factors that are prerequisites for a vital tumor service A service of this type obviously cannot be successful without the enthusiastic backing of the Command. The hospital order setting up the tumor service must be firm clear and without loopholes or equivocation. One hundred percent par tempation by the staff must be mandatory. Adequate space must be provided. There should be a suitable office for the executive

Fom U.S. N val H p 1 P mo th V

secretary and another for the clerical secretary Adequate filing cabinets are required with an acceptable moon for the storage of records in the tumor clinic A cheerful and tastefully furnished waiting moon for patients is highly desirable. At least two examining rooms are required. One should be equipped with a table suitable for abdominal, pelvic, and proctoscopic examinations, and all instruments and items of equipment necessary for examinations of this type, including, of course, vanous instruments for biopsies, should be available in the clinic. The second room should be equipped with a suitable chair and the necessary lights and instruments for ear eye, nose, and throat examinations. The tumor board conference moon should be sufficiently large to accommodate all staff medical officers. It should be equipped with adequate sound and projection equipment and multiple-tiered x ray view boxes.

The personnel requirements are of the utmost importance. The executive secretary occupies a key position in the timor service and the individual selected for this assignment should be chosen with the greatest care. This position requires a medical officer of tact energy, enthusiasm, and a sincere interest in patients with malignant disease. He should be circumspect diplomatic, and able to handle people well. It is a great asset if the executive secretary is trained in oncology and almost a necessity for him to be surjuically trained. The clenical secretary should be of a high degree of intelligence, personable discreet, a proficient typist, well versed in medical terminology, and able to take shorthand rapidly and accurately. A full time graduate nurse is desirable in a busy tumor clinic but a Hospital Corps Wave makes an acceptable substitute where personnel shortages prevent the assignment of a nurse.

PATIENTS NOT SEGREGATED

It is to be emphasized that there is no "timor ward" or wards in this hospital and the segregation of patients with malignant disease is distinctly not advocated Each patient with a malignancy is retained on his or her patient service and treatment is actively directed by the medical officers on that service, guided, of course by the recommendations of the timor board. This avoids the adverse psychologic effects of congregating all patients with cancer together and permits each service to retain direct control of the care and treatment of its own patients.

When first organized, or converted from a "paper organization which is accorded only lip service or token participation to a real and vital part of the hospital a timor service is apt to meet a degree of at least passive resistance from a few members of the staff However, if the service is run on a high professional plane, its worth soon becomes apparent and those who initially resisted

the tumor service in principle become enthusiastic participants. This outcome is inevitable when it is clearly shown that a tumor board serves alike the best interests of patients with malignant disease and their responsible obvicions.

Although a tumor service has long been in operation in this hospital about one year ago a complete reorganization was of fected in an effort to revitalize the service and to increase its scope and usefulness. A second objective was to meet the minimum requirements for the conduction of tumor clinics and cancer detection centers which have been established by the Committee on Cancer of the American College of Surgeons.

Numerous difficulties were encountered during this period of change and much was learned by trial and error II is believed, however that now an organization has been established that functions officiently and satisfies all of the requirements of the Amer ican College of Surceons.

We believe that a description of the organization and operation of this service may be of use and interest to others who are either organizing an oncology service for the first time or contemplating the revision of an existing service in order to increase its efficiency.

The Board of Regents of the American College of Surgeons has established three official listings portaining to oncology services.

- I Cancer Hospitals
- II General Hospitals maintaining a Cancer Registry as the only form of a cancer program
- III General Hosp tals maintaining a Cancer Registry plus Cancer Clinical Activities to e
 - A Cancer Consultation Service or
 - B Cancer Consultation and Treatment Service

This hospital which has been designated as an oncology center by the Chief of the Bureau of Medicane and Surgery of the United States Navy is in class III B

CANCER SERVICE

The services at this hospital for the diagnosis and treatment of cancer and allied diseases are the tumor board the reviewing committee cancer detection clinics and the tumor clinic

The Tumor Board The tumor board is composed of the chief of surgery (as chairman) and the chiefs of the medical labora tory radiologic and dependents services the executive secretary of the tumor board the chief of the specialized service of the

particular patient under consideration (when the patient is presented by a service whose chief is not a regular member of the tumor board), and a full time civilian recording secretar.

The board has over all cognizance of the treatment and disposition of all patients with neoplastic diseases in the hospital Definitive therapy is not instituted prior to the consideration of the patient by the board or its reviewing committee Medical of ficers have been directed to adhere strictly to the recommendations of the board Should the presenting service disagree with the decision of the timor board, the patient may be re-presented for further discussion

Formal meetings of the timor board are held at weekly intervals at a regular time and place. Emergency meetings of the entire board or its reviewing committee are held whenever a patient requires immediate consideration

The Medical Officer in charge of each case is responsible for (1) informing the executive secretary of the board within 24 hours of the admission or detection of a patient with known or suspected malignant disease, (2) presenting the patient before the tumor board at its weekly conference or before its reviewing committee and for furnishing a summary of the case on a standard form to the executive secretary, (3) presenting to the board in follow up those patients in whom a diagnosis has been established definitive treatment completed, or where circumstances have ansen which make it advisable to consider a change in the thorapeutic program and (4) ensuring that each patient with a neoplastic disease, prior to discharge from this hospital or upon the completion of treatment is sent to the timor clinic office. At this time, the patient is files are checked and he is given specific instructions in the follow up procedures

Reviewing Committee The reviewing committee functions as the executive committee of the timor board. The membership may vary from case to case but is allways composed of at least three members of the timor board and consists of the chief of the service from which the patient is presented, the executive secretary of the timor clinic and the chief of that particular service, who, because of his specialty training may be expected to be of the greatest assistance in arriving at a proper decision concerning the patient under consideration Additional members of the timor board may serve on any given reviewing committee and frequently, because of the complicated problem to be considered, they are called upon to do so.

A reviewing committee may be convened by the executive secretary when any service has a patient to present whose problem is sufficiently urgent that it would be unwise to wait for formal pres

entation before the tumor board. The reviewing committee also meets regularly once weekly in addition to the emergency meetings mentioned in the preceding paragraph at which tume those patients are dealt with who were not selected because of the routine nature of their problem for presentation before the weekly tumor board conference.

Cancer Detection Clinics Chiefs of services are responsible for the operation of cancer detection clinics in their respective departments and are required to maintain and operate their facilities in accordance with the standards outlined by the American College of Surgeons for cancer detection centers Patients found to have positive or suspicious findings are then referred to the tumor board.

Tumor Clinic The executive secretary of the tumor clinic is a medical officer preferably trained in oncology who is appointed to his position by the commanding officer. He is a permanent member of the reviewing committee the recorder of the tumor board and the executive assistant to the chairman of the tumor board and as such is responsible for the preparation of the agenda for the weekly tumor board meeting. He supervises the maintenance of a record system adhering to the requirements established by the Committee on Cancer of the American College of Surgeons implements the follow up service by which contact is maintained with patients with neoplastic diseases in accordance with the recommendations of the bimor board and is avail able on request as a consultant to any of the services in arranging for or in carrying out special diagnostic or therapeutic procedures. In addition he co ordinates consultations which may be requested in accordance with the decisions of the tumor board. When a pa tient with a neoplastic disease is transferred from this hospital to another medical facility for treatment it is his duty to see that adequate records including mentgenograms if appropriate and microscopic slides of the lesion are forwarded promptly to the activity to which the patient is transferred. He supervises the full time civilian secretary who is charged with the respon sibility of recording verbatim the entire discussion of each case presented at the formal board meetings and who does the routine clencal work in the clinic proper

DISCUSSION

The weekly formal tumor board conference is primarily designed for teaching A mimoographed program stating the patient's name ward diagnosis and the name of the presenting physician as well as the reason why the case is being presented (* e for diagnosis for treatment, for diagnosis and treatment, for follow up and for interest) is distributed to each medical officer two days prior to the meeting. This allows time for interested physical programs of the meeting of th

cians to examine the patient or review the literature on the subject prior to the presentation of the patient at the conference

At the weekly session, the case history is presented by the patient's ward medical officer. Significant reentten findings are reviewed by the radiologist. If a specimen for biopsy has been taken, the microscopic slides are projected on a screen and discussed by the pathologist. The patient is shown in person if the physical findings are of particular interest. The recommendations of the presenting service are then given by the medical officer who presents the case and the case is then open for free discussion. Comments, suggestions and discussion from the floor are encouraged, after which the tumor board members discuss the case. Members of the tumor board may make alternative proposals as to the management of the patient in question and following full consideration of all proposals, a decision is reached by a majority vote.

Interest has been high and the attendance at these conferences has been good. Lively differences of opinion have been expressed by members of the staff who were trained not only in different geographic but also in widely differing philosophical medical environments. However, in most instances the members of the tumor board have concurred with the recommendations of the presenting service.

For each patient who comes to the attention of the timor board or the reviewing committee an alphabetical index card, a follow up control card, and a timor board jacket are prepared. The timor board jacket contains (1) the presenting medical officers initial case summary, (2) a verbatim transcript of the timor board discussion or a summary of the action taken by a reviewing committee (3) the operation record if an operation was performed, (4) a complete record of any irradiation therapy that may have been given, (5) pathologic reports, (6) photographs and photomic graphs if any have been taken, (7) a copy of the hospital discharge summary, and (8) a copy of the necropsy protocol if the patient came to autopsy

For each patient with a malignant disease, an American College of Surgeon s Cancer Summary Form is completed. The jackets of those patients who are found not to have a neoplastic disease are transferred to an inactive file.

An assortment of printed form letters has been prepared for obtaining follow up data. A letter specifying the date and time when a patient is to report for follow up examination is given to him when he leaves the hospital. Those patients who had been in this hospital prior to the inauguration of the present system are contacted by telephone or letter. Other form letters are sent to the patients private physician or to the Veterans Administra

tion—in any event to the physician who is medically responsible for patients who are no longer in the service. The families of former patients who cannot be located are contacted for follow up information. Replies to over 85 percent of our inquiries have been received, and a majority of those responses have contained per tipent information concerning the patient.

SUMMARY

The organization and operation of the cancer services in this hospital have been briefly reviewed. The organization and method of operation of the timor service in this hospital does not represent original ideas on the part of the authors. It follows quite closely the recommendations of the American College of Surgeons as set forth in its various publications concerning the organization of timor services and cancer detection centers. Furthermore a similar organization is in effect in other naval hospitals.

REFERENCE

1 M lf Ca Programs. Appro d by th Cama Ca Am Coll g f Sag 1953. p 3

OSLER THE PROLIFIC AUTHOR

Almost everything that Osler did seemed eventually to develop into an article for a medical journal a chapter in a textbook a lecture which was reported or notes and comments in his daybooks. He would dash off from a visit to his relatives in Canada to see o make a pot mortem and find rare disease that would subsequently be written up He made full notes of such cases at Blockley as especi. Ily interested him and thi spent hours over the microscope with specimens obtained Thogh it is evident that he worked with intense concentration it is amazing that he was able to take such an active part in so many organ inzations and still find time for long holidays and even on these he got grist for his literary mill. As he said later. Both pen and brain got a deal of practice in Philadelphia. And not only did he himself turn out work, but by his example and his contagious enthusiasm Osler stimulated tho e who came in contact with him to observe record and publish.

-WILLIAM WHITE Ph D
Int nat nalR d / M d ne nd
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Clinicopathologic Conference

U S Naval Hospital St Albans, N Y *

DIARRHEA

Summary of Clinical History A 33 year old woman entered the hospital because of nausea, vomiting, and diarrhea Since the age of 23 she had had remissions and exacerbations of psoriasis associated with arthritis The skin and arthritic lesions almost completely disappeared in 1951 following the intramuscular administration of 0.5 gram of cortisone daily for 21 days. In February 1953, however, her symptoms recurred Cortisone was again instituted and she was maintained on 100 to 150 mg daily orally until 24 January 1954 with little improvement and mild fluctuations in her complaints. She then began to note nausea, emesis, and diarrhea The diarrhea, accompanied by cramps, occurred soon after eating and the stools contained material similar to the ingested food. She had no fever Because of the persistence of these complaints for five days she was admitted to the hospital on 29 January.

Physical Examination Physical examination on admission revealed a blood pressure of 120/100 mm Hg, temperature, 98 8 F, pulse, 88 and respiration, 22 She weighed 111 pounds There were extensive psoriasiform lesions over the entire body Her extremities were markedly deformed and there was limited motion of most of her joints Her abdomen was flat, nontender, and with out palpable masses

Laboratory Studies On admission her red blood cell count was 3760,000 per cu mm, hemoglobin, 10 5 grams per 100 ml, and homatocrit, 36 percent. A white blood cell count showed a total of 5,400 cells per cu mm with a differential count of 63 percent neutrophils, 32 percent lymphocytes, 3 percent monocytes, and 2 percent eosinophils A urinalysis revealed normal findings The following day the blood urea nitrogen was 43 mg per 100 ml chloride, 625 mg per 100 ml, and CO, combining power, 44 7 volumes percent

^{*}C pt Harold G Young (MC) ISN Command ng Off cer From the ledical Service
Capt Lawrenc E Back (MC) INN Chast

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A barium enema and a gastrointestinal roentgenographic series revealed a gastrocolic fistula (fig 1) An electrocardiogram showed a semivertical electrical axis without other abnormal 11100



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th ga tro luc fistula,

The dosage of cortisone (25 mg four times a day) was grad ually reduced for four days and then discontinued on 4 February

On 8 February her blood pressure dropped to 69/48 mm Hg and she complained of being very thirsty The blood urea nitrogen now was 31 7 mg per 100 ml but the chlorides rose to 790 mg per 100 ml The CO, combining power remained about the same at 42 8 volumes percent

On 9 February an electrocardiogram showed a vertical electrical position and depression of the ST segments in leads I II and III The amplitude to T T_1 and T was decreased and $T_{\rm avr}$ was depressed T waves from V_1 through V were less upright than in the previous reading The ST segments in V, and V were slightly depressed and the QT interval (0.26 sec.) was increased over the previous reading. She continued to be hypotensive On 11 February the blood urea nitrogen became elevated to 53 5 mg per 100 ml the chlorides dropped to 755 mg per 100 ml and the CO combining power to 40 0 volumes per

cent The total plasma protein was 5 64 (albumin, 2 86, globulin, 2 78) grams per 100 ml

Course in Hospital On 13 February, following administration of 500 ml of blood, the patient complained of epigastric, substernal, and head pain She moaned continuously and appeared apathetic, answering questions only by saying "yes" or "no" Her blood pressure increased to 120/70 mm Hg She continued to have diarrheal stools that contained undigested food The following day her speech was slurred, she had difficulty in swal lowing, and became incontinent of urine and feces

In preparation for surgical exploration, doses of cortisone (50 mg twice a day, 50 mg four times a day, and 75 mg daily) were given on 13, 14, and 15 February respectively On 15 February a laparotomy was done and the gastrocolic fistula was repaired under general anesthesia. The patient's blood pressure had to be maintained by continuous intravenous infusion of levophed (brand of levarterenol bitartrate) during the operation. For two days following the operation she was semistuporous, irritable, and hypotensive Continuous drip of levophed was given to maintain her blood pressure. Each day postoperatively, 50 mg of cortisone were given intramuscularly four times a day Twenty units of corticotropin (ACTH) were given intramuscularly on her second and third postoperative days. After a short clinical improvement on her third postoperative day, she died suddenly

DISCUSSION

Decirer Le vy When this patient was first hospitalized she had a definite gastrocolic fistula presumably due to perforation of a gastric ulcer into the colon I is rather unusual to have a perforation into the colon as a complication of peptic ulcer whether cortisone has been used or not In most instances this complication occurs in patients who have had a long standing ulcer or a gastroenterostomy as a result of which the colon has become adherent to the intestine Occasionally neoplasms of the stomach are accompanied by a slow perforation This case is unusual in that the perforation occurred without any antecedent knowledge of a peptic ulcer and without any previous operation

In the differential diagnosis we should consider the possibility of an ulcer of the colon perforating into the stomach. There were no preceding intestinal symptoms to suggest ulcerative colitis. Arthritis in conjunction with intestinal disease occurs in Whipple's disease but the patient's age and sex and the absence of steatorrhea are against this diagnosis.

Lt. Carroll M L evy (MC) USNR Med cal Service

Discontinuation of cortisone led to shock which was accompanied by thirst an elevated serum chloride and azotema These changes occurred although the dose of cortisone was tapered off gradually and they reflect the degree of adrenal depression which had developed over the preceding months when she had been receiving cortisone Probably this was accompanied by atrophy of the adrenal gland principally due to a loss of lipid in the zona glomerulosa and zona fascic ulara Atrophy of the adrenal cortex induced by adrenal steroids is the result of decreased endogenous excretion of corticotropin (ACTH) The hypotension and hemoconcentration are typical of adrenal insufficiency secondary to withdrawal of cortisone However one must consider the possibility that she had hemorrhage or a further performance to the contraction of the possibility that she had hemorrhage or a further performance to the contraction of the contractions of the possibility that she had hemorrhage or a further performance to the contractions of the contractions of the contractions of the contractions of the contractions of the contractions of the contraction of the contractions of the contraction of the contracti

Thirst which was present may be attributed to decreased secretion of saliva due to dehydration or to an alteration of her serum sodium concentration and/or plasma volume Probably both hypovolemia and hypernatremia contributed to this symptom. The low CO combining power nd the elevated serum chloride are of interest Hyperchloremic acidosis which is usually seen with ammo jum chloride therapy of ureteral implants into the colon could explain these findings Whether the gastrocolic fistula prod ced a similar metabolic defect is not too clear It seems more likely that the hyperchl remia was due to water dehydration and the accompanying acidemia was related to accumi lation of organic acid as a result of renal functional impairment With prolonged cortisone therapy renal dysfunction may occasionally result from morphologic changes in the kidney sin lar to the intercapillary glometuloscler sis de cribed in diabetes by Kimmelstiel and Wilson however abnormal kidney function in this patient was probably due to adrenal insuffic ency and shock

The electrocardiographic picture appears to be typical of that seen n adrenal insufficiency. Adrenal insufficiency may be accompanted by depression of S-T segments and T wave changes without demon strable changes in the serum potassium or calcium. However because of the gastrocolic fistula with probable deficiency of these cations due to poor food absorption one cannot be sure that their deficiency did not contribute to the resulting electrocardiographic alterations. If the Q-T interval had been prolonged it would have suggested hypocalcemia because potassium deficiency h s no effect on this interval Potassium deficiency nereases the prominence of the U wave in addition to deressing the T waves and S T segments.

After the patient's blood pressure returned to normal she had apathy and sensorial changes which probably were due to hormonal effects and which reflected the gr viry of her illness Refractoriness of hypotension to levophed and other vasopressor agents is typical of adrenal insufficiency.

At the time of operation she was critically ill Patients with gastrocolic fistula are always poor surgical risks. The superimposition of adrenal insufficiency in such patients makes surgical intervention more hazardous. Patients receiving adrenal steroids at any time during a preceding period of from six to 12 months may require special therapy. These patients should be on a regimen similar to that prescribed for those having adrenal ectomy for Cushing's disease, metastatic carcinoma or hypertension

A satisfactory program would consist of 200 mg of cortisone 48 hours 24 hours and two hours preoperatively and the intravenous administration of 10 mg of hydrocortisone per hour during the operation and for four to six hours postoperatively. This should be followed by 50 mg of cortisone every six hours on the first postoperative day every eight hours on the second and third postoperative day and then m gradually decreasing doses. When withdrawing ACTH or cortisone and its analogues it is essential to gradually reduce dosage. It may be helpful to give ACTH during the withdrawal period of cortisone. The possible development of acute adrenal insufficiency makes it desirable to give whole adrenal extract.

In summary I believe that this patient's terminal illness was due to complications of adrenal steroid therapy Biochemical alterations incident to adrenal insufficiency were probably responsible for the electrocardiographic sensorial and blood pressure changes. The morphologic abnormalities which were encountered such as the gas trocolic fistula and probable adrenal atrophy were secondary to physiologic alterations which may occur when exogenous adrenal steroids are administered.

Doctor B cke Are the symptoms she had following the blood trans fusion of any significance?

D ctor Leevy I thought about the explanation for these symptoms and believed they could be a part of her cerebral changes related to adrenal insufficiency. They might represent the effects of suddenly increasing the plasma and/or blood volume with transfusions or finally be due to transfusion reaction. It was quite difficult to determine from the protocol which if any of these mechanisms was responsible.

D:rFly Would it have been wiser to use hydrocottisone intra venously or whole extracts of the adrenal?

Detr Leevy Yes I think so If one administers cortisone it is presumably changed to hydrocortisone. In an acute situation it is better to give hydrocortisone. In patients with associated electrolyte de pletion corticosterone would be preferable. Patients who have received

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cortisone over prolonged periods may have hepatic injury due to its catabolic effects expressed anatomically by fat accumulation in the liver and biochemically by a decreased excretion of urinary 17 keto-steroids. Liver damage may contribute to decreased response to contisone Where there is uncertainty it is advisable to give hydrocortisone untravenously. In a patient with a gastrocolic fistula in whom materials given orally may not be absorbed it would be desirable to give all medications by prusele or vein.

Dr Leevy's diagnosis

Adrenal atrophy and insufficiency secondary to steroid therapy

PATHOLOGIC FINDINGS

Det B h We have with us today our visiting consultant in pathology Doct r John M Pearce who will tell us actually what was the trouble We have been speculating up to now

D et P e Wil they are all very good speculations. At auxopsy the patient was found to be an extremely emaciated person with considerable deformity and an apparently horible skin condition a derma titis or rash. When the body was opened I 000 ml of clear amber fluid was found in e ch pleural cavity and 2 000 ml in the peritoneal cavity. Such fluid collections may be explained on the basis of poorly functioning kidneys due to hypotension during a time in which she was getting a great deal of fluids intravenously just as a means of getting the Levophed into her She had no pulmonary or subcutaneous edema.

The heart weighed only 250 grams and although the patient was a small woman this weight is on the lower border of normal M croscopic examination revealed a rather striking atrophy of the muscle fibers of the myocardium itself Such atrophy probably was not a factor in her inability to maintain her blood pressure. In both lower lobes of the lungs there were fairly extensive infactions and there were thrombi in the distal inferior branches of the main lower branches of each pulmonary attery. The prosector was not able to find any thrombus in a vein which might be a source for embol; Therefore the conclusion was reached that they were not emboli but were local thrombi that occurred because of the poor state of the circulation and the patient's extreme illness a static thromboss in the dependent atteries.

The liver was large and weighed 2 550 grams. It was a very greasy and yellow liver. In other words, there was a marked infiltration of fat throughout the liver (fig. 2). Two possible explanations for the fatty liver are (1) cortisone causes a deposit on of fat inhin the cytoplasm of the liver cells and (2) the presence of a gastrocolic fistula

^{*}D Jh M. Par Dp m f Surg 1 P b logy C II U y M d I

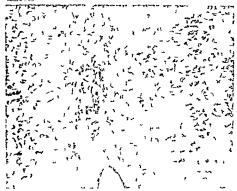
results in absence of food absorption Because of the extensive fatty metamorphosis there was not enough intact liver parenchyma for neces sary liver functions although the organ as a gross organ was larger than normal The gallbladder curiously contained a few milliliters of very watery mucous material Apparently no bile was entering the gall bladder but on the other hand there was no obstruction of the cystic duct This white bile which one finds in hydrops of the gallbladder is of course as you all know usually the result of an obstruction of the cystic duct Here there was no obstruction Presumably the



(× 75)

liver was the parent of the watery bile but the patient was not jaun diced so it s a little hard to explain it by the argument that the liver was not putting out good bile. The pancreas was not unusual. The gastrointestinal tract showed the evidence of the repaired gastrocolic fistula The fistula was on the greater curvature of the stomach which is an unusual place for a peptic ulcer to occur. It was especially un usual because as this stomach was further examined another chronic peptic ulcer situated in the more usual spot on the lesser curvature a few centimeters above the pylorus was found It measured 11/2 cm in diameter was quite deep and had a nice clean-cut edge. The patient apparently had no symptoms of the ulcer just as she had no symptoms of the fistula other than the mechanical transfer of stomach contents into the colon

Now we come to the really important factor the adrenal glands. The adrenal glands were markedly arrophic the cortex measured well less than a millimeter (ig 3) Curiously, they did have que as his of lipoid material. Attophy of the adrenal glands due to cortisone therapy usually is associated with a diminished lipoid content. It is the lipid which contains the various steroids. In this case the cortical cells contained quite a bit of fat however the cortex as a whole wis markedly narrowed.



Figur 3 Photomicrograph howing and nall ortical at opby with med min ti funcy lix tion. (*75)

The pituitary was grossly normal but had histologic changes which are of great importance. In adrenal atrophy secondary to cortisone therapy it is thought that the pituitary is suppressed so that it puts out no corticotropin. Without the stimulus of the corticotropin atrophy of the adrenal occurs. The histologic changes in the pituitary consist of a loss of granularity of the cytoplasm of the basophilic cells. These cells tend to become hyalimized. In spite of the patient's psychotic symptoms the brain showed no gross abnormality, it was not edema tous and there was no lesion. The kidneys were normal in size. There was no tend lesion.

D to G ! What happens to the adrenal medulla in these patients?

^{*}Cap Roald N G (MC) USN Ch | Sura | 1 Se

Doctor Pearce As far as I know it doesn't change very much

Doctor Leevy Would you call those Crooke's hyaline changes in pituitary?

Dictor Pearce Nes

Anatomic diagnoses

Adrenal atrophy secondary to prolonged cortisone therapy

Fatty liver

Gastrocolic fistula, repaired Peptic ulcer of stomach

Hyalinization of basophils of pituitary

Psoriesis

Static thromboses of inferior radicals of left and

right pulmonary arteries

Doctor Both This case was selected for presentation not so much because of its value as a diagnostic problem but for two very important additional reasons (1) Because of its potentiality for provok ing a general discussion of hormone therapy and (2) because it would we hoped serve as a very forceful reminder to all that many of our present-day therapeutic measures-chemotherapy antibiotics sulfa drugs hormones et cetera-have the unhappy faculty of producing undestrable and sometimes disastrous results. These effects are not always predictable except as a possibility However and I am sure all of you will apree we must always be conscious of these effects and aware of the fact that we are many times taking a so-called "cal culated risk" in their use and equally as important that these medications should be prescribed only in the presence of definite clinical indications

CANCER OF THE PROSTATE

Any carcinoma (of the prostate) can be cured if found early enough and extirpated-the problem is to find it. Thus it is urged that more routine rectal examinations be done in men over 40 and more perineal punch biopsies be done in men under 70 having suspicious prostatic nodules exhibiting no evidence of metastasis or extension Conse quently it is also urged that more patients be considered as candi dates for tadical prostatectomy

⁻DAVID & CHASE M D ın Rocky Mountain Medical Journal p 978 Nov 1954

CASE REPORTS

An Illuminating Case of Foreign Body in the Peritoneal Cavity

RUSSELL O SETTLE M d c l D ct
JOHN J MENDILLO S Ass t t Surg n
VICTOR W GROISSER S A sta t Surge

U S. P bl c H alth S rv

A WIDE VARIETY of foreign bodies have been found in the peritoneal carity 'Including such diverse items as hemostats, hairpins physicians eyeglasses metal sounds sponges, sewing needles and chicken bones to name but a few Previous surgical procedures during which material is left be hind perforation through the bowel of swallowed articles trau matic penetration of the abdominal wall and perforation of the uterus in attempted abortions are the most frequently reported causes Though numerous objects have been found in the rectum or sigmoid colon following introduction through the anal orifice further progress into the abdominal cavity is uncommon Vost foreign bodies of the lower bowel are self reported and are removed via the anal orifice

CASE REPORT

A 51 year-old white male federal prisoner was brought to the emergency room of the hospital at 11 00 p m on 22 November 1953 complaining of severe lower abdominal and rectal pain and a mass protrud ing from the anus. He stated that he had been attacked five hours earlier by three assailants who forcibly inserted an object of some type into his rectum resulting in severe pain and syncope When he revived he began having violent abdominal cramps which communed to increase in intensity. He attempted to relieve himself by moving his bowels but something came out which I could not get rid of The distress finally became so intense that he called for help. He was first seen at the hospital by a civilian medical technician who notified the medical officer on duty reporting a severely ill parient holding his abdomen in great distress who appears on examination to have a piece of flesh hanging from his rectum half way to his knees The patient was immediately examined by a surgeon who noted that the piece of flesh" was a mass of viable greater omentum protruding nine inches beyond the anus. The pain was apparently exeruciating The patient's blood pressure was 120/80 mm. Hg pulse 90 per min

respiration 20 per min and temperature 100° F. The lower abdomen was boardlike with exquisite rebound tenderness. Peristalsis was absent He was weating an artificial leg having had a right lower leg amputation in the past. Except for the protruding omentum there were no external signs of injury and no other positive physical findings.



Figure 1 (A) Anteroposter or and (B) left lateral views of the abdomen showing a light bulb surrounded by gas in the upper perstoneal cavity. The less dense extension with the two buttons seen at the base of the bulb was found at operat on to consist of cardboard cloth and friction tape forming a bandle for the bulb.

The patient was immediately prepared for operation At exploratory laparotomy two hours later the greater omentum was found prolapsed into the colon through a 6-cm laceration in the anteromedial wall of the recrossignoid and the transverse colon drawn down tightly into the pelvis. The omentum was operatively divided where it entered the colon and the distal portion removed from below. The tear in the rectosignoid was repaired uneventfully but the remainder of the abdomen was explored manually with considerable difficulty due to fading of the spinal anesthetic. In spite of supplemental intravenous morphine pentothal (brand of thiopental sodium) and curare the abdomen was closed with difficulty.

On the second and third postoperative days the patient's condition was considered excellent. On the fifth postoperative day he complained of increasing abdominal pain and examination revealed signs of early intestinal obstruction. The temperature and leukocyte count rose there was tenderness and a hard mass in the left upper quadrant. The first flat place of the abdoren was taken at this time and tevealed to the amazement of all a large light bulb lying in the upper abdomen (fig. 1.

A and B) The patient was again taken to the operating from the previous left rectus incision reopened and the foreign body removed from

an abscess cavity located high under the transverse colon and the remaining portion of the omentum adjacent to the inferior aspect of the mesocolon. On close scrutiny it was found to be an intact 60-watt electric light bulb with the base encased in cardboard forming a round of handle into which torn pieces of underwear cloth were tightly packed to give the handle substance. Two buttons were attached to one fragment of cloth. This was all held together with black friction maps. No further lacerations of the gastrointestinal tract were found and it seemed obvious that the bulb had entered the peritoneal cavity through the rectosigmoid teat but had been overlooked at the first laparotomy.

Thereafter the patient's condition deteriorated Three weeks post operatively he again developed incomplete intestinal obstruction due to the formation of another abscess. This was drained at operation but 28 hours later a fecal fistula developed opening into the mid jejunum. In spite of all efforts the fistula remained patent and the patient developed increasing malnutrition and inanition which finally resulted in his death on 15 April 1954 about five months after the nursal admission.

DISCUSSION

Several accounts of light bulbs entering the rectum and sigmoid colon through the anal ortice have previously appeared in the literature although to our knowledge this is the first report of a light bulb ling free in the abdominal cavity. Smooth objects of this type drinking glasses bottles et cetera, are not un commonly self introduced for variously stated reasons, such as the relief of constipation or the replacement of prolapsing hemor rhoids and similar cases are not unusual in the surgical practice of large general hospitals. Some patients will admit that the foreign body was employed for erotic gratification though most give less self incriminating explanations.

In view of this the probable mode of entry of the bulb into the peritoneal cavity of this patient is of some interest. Thore ough investigation of the alleged assault indicated that the patient a recidivistic cririnal, had not been attacked but rather had in all likelihood, been using the rounded handle of the light bulb for anal masturbation. The five hour wait before seeking medical and the absence of witnesses who could corroborate his story of the attack the known frequency with which adult rate prisoners practice anal erotic stimulation the fact that an unbroken light bulb could hardly have been forcibly introduced past the anal sphineter without the patient's co-operation and the manner in which the base of the bulb had been fashioned into a handle led to the conclusion that the history given was a pure fabrication. It was assumed therefore that the bulb had been elf introduced accidentally and that the patient under

standably did not wish to reveal the true sequence of events A short broom handle with a bent nail protruding from one end, dis covered in the patient's cell following the incident, was evidently used by him in an attempt to retrieve it Ilis manipulations un doubtedly produced the laceration of the rectosigmoid through which the bulb slipped into the abdominal cavity and the omentum subsequently prolapsed

Certainly this case is an excellent illustration of the impor tance of taking a roentgenogram of the abdomen of every patient presenting an acute abdominal emergency despite the apparently obvious diagnosis and the necessity of immediate laparotomy Had a routine flat plate been ordered on the night of admission the true nature of the situation would have been immediately apparent, the surgeon would have been spared the embarrassment of overlooking such a large foreign body, and the patient's life might have been saved

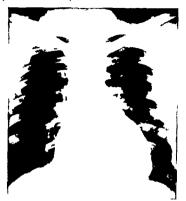
SUMMARY

A case of a foreign body in the abdomen is herewith presented, with the portal of entry for a 60 watt light bulb, found intact in the peritoneal cavity and originally missed at operation, being the anal orifice It would appear that the bulb, the base of which had been fashioned into a handle by covering it with cloth, card board, and friction tape, was self introduced into the rectum accidentally during an act of anal stimulation. It then gained entrance into the peritoneal cavity through a tear in the rectosigmoid which the patient made in an attempt to retrieve it. The importance of taking a preoperative flat plate in abdominal emergencies is again stressed

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approximated 90/70 112/96 and 96/82 mm Hg the pulse rate rose gradually to 100 and the respiration to 24



Fg re 2 Roe tgen gram tak 1 May 1954 bowing glib labe thadow a octated with per caldilleff on ndicardiac tambonade

The patient's head and neck were cyanoise in the morn of The neck veins were distended and the venous pressure was 60 mm of water A paradoxical pulse enlarged cardiac outline and feeble heart sounds were present Respiration was 28 blood pressure 92/80 pulse 110 The patient ws placed in orthopnic position and oxygen was administered by nasal catheter. The venous fluids and nasogastrie suction were stopped. A diagnosis of cardiac tamponade related to the chest wound sustained 16 days before was made.

At 1300 hours the patient was very cyanotic and distressed Blood pressure was 64/0 mm Hg pulse 122 respiration 28 A pericardi 1 tap was done and 360 ml of serous fluid was removed under rid pressure. The fluid was sterile and contained only polymorphonucleocytes and lymphocytes. The pitent improved immediately and the blood pressure returned to 114/80 mm Hg and the pulse to 72

Roentgen graph c studie later reve led a loss of the globular c ntour and showed the heart ze to be norm 1 (fig. 3). The patient was ambulated gradually Electrocarcingmonic findings were no mal. On 9 May the patient was customized to corr



Figure 3 Roentgenogram taken 14 May 1954 The caratac silbouette 15 normal

DISCUSSION

The case illustrates the treachery of a small wound of the thorax which produced little difficulty at the time of occurrence but was followed 16 days later by acute pericardial tamponade It is impossible to determine completely the extent of a wound without exploration of it

In retrospect, the initial roentgenogram showed pneumopers cardium which might have been a clue to the true nature of the wound

Perforating and penetrating wounds of the heart due to stabbing have become uncommon in military personnel since the advent of body armor Stab wounds of the chost are still relatively common in the civilian population Farringer and Carri reported that more than 50 percent of the chest wounds in civilians were due to stabbings. They mentioned two patients who died because of delay in mailing the diagnosis of cardiac tamponade.

909

It is always desirable to explain the problem at hand and its effective solution if achieved It appears that this soldier had a wound which involved his pericardium. The serous surface of the pericardium responded to the injury by producing fluid which compressed the heart gradually ultimately producing tamponade The hypotensive state was due to inadequate cardiac output resulting from tamponade

STIMMARY

A small chest wound seemingly superficial caused pneumo-pericardium in a patient associated with cardiac tamponade oc curring 16 days after injury A single aspiration of the pericardial sac was a lifesaving measure

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THE PARADIGM OF FRUSTRATION

To me it appears a disservice to students if we e courage them in the r search fo pathognomonic signs rather than have them view all aspects of a patient's problem as an entity and it is particul fly deplorable if through mispl ced focus of attention we let them infer that a clinical problem can be appropriately described in a series of labor tory reports. To some tudents fresh from their courses in the medical sciences and fired with zeal to put clinical pediatrics on an c curat quantitative basis the identification of Mongolian id ocy repre s ats the p radigm of frustr t on-a situation in which no one sign is diagnostic and in which all the ccessory ids one can bring to bear including x ray carry less weight th n does the impression gained on simple inspect on Here is the problem of the weight of evidence in a nutshell If then tudents are to be coaxed to accord more judicious cons deration to information which they may glean from history and from physical examination w owe them guidance in those clus ve areas of clinical trob bilities and the influence of age on normal behavior and on behavior during illness the pediatr ci n s special preserve

> -RUSTIN M INTOSH M D A M A Am Jo mal J D / Cb ld pp 3 4 J ly 1954

Lithopedion

ROBERT E L NESBITT I: Capta n MC USAR

In CERTAIN lower animals lithopedion formation in utero is relatively common, the fetus being retained in the uterus for a long time with subsequent deposition of lime salts. It is generally conceded, however, that lithopedion formation in man is confined to extra uterine pregnancies in which part or all of the products of conception are extruded or initially implanted into the abdominal cavity where calcification takes place Cavetestablished additional factors necessary for the formation of lithopedions sluggish circulation, absence of infection, and a fetus advanced more than a three month gestation.

Bainbridge cited an interesting reference from Gould and Pyle pertaining to this subject. "Israel Spach in an extensive generating over hypotheside in 1557 figures a lithopedion drawn in situ in the case of a woman with her belly laid open. He dedicated to this calcified fetus—the following curious epigram. Roughly translated from the Latin the epigram reads as follows: Deucation cast stones behind him and thus fashioned our tender race from the hard marble. How comes it that nowadays by a reversal of things, the tender body of a little babe has limbs nearer akin to stone?

The chemical changes responsible for the production of a lithopedion are not well understood Calcium is deposited in dying or dead tissue without reference to the blood calcium Fatty degeneration occurs initially then hydrolyzation takes place and a fatty acid is liberated The fatty acid is replaced by carbonic acid and phosphoric acid in the blood to form calcium carbonate and calcium phosphate Wells' found that pieces of stenlized cartilage placed in the peritoneal cavity of a rabbit soon became calcified having taken up lime from the fluid in which they bathed He concluded that the process is a physical rather than a chemical one, the calcium and phosphate being absorbed by the degenerated tissue MacCallum' believed that some local chemical process must be responsible for the precipitation of calcium in the dead materials exposed to the circulating fluids, as well as in bone He stated that iron is practically always demonstrable in areas of calcification, but it is possible that it is merely absorbed

From U.S. Army Hospital Bad k, uznich Geima y. Dr. kisbπi now at J.hns. Hopki s Hospital Balum. Md

by the calcium salt or precipitated by pho phone acid liberated in that position

Schumann¹ categorized the final results of ectopic gostation as follows resorption mole formation homotocele suppuration skeletonization and adipocere and lithogedion formation

Nüchenmeister proposed a practical method of classifying lithopedion specimens

- 1 The lithodelyphos in which the membranes alone are calcified and form a hard shell surrounding the fetus. The fetus is not involved in the process of calcification.
- 2 The lithokelyphopedion in which both the membranes and the fetus are calcified
- 3 The true lithopedion (stone child) in which the fetus is in filtrated with calcium salts and in which calcification of the fetal membranes is negligible. This typo occurs when the fotus ex trudes unattached into the abdominal cavity and the membranes are either left behind or ightly wrapped about the fetus.

Masson and Simon' preferred to use the term lithopedion for the entire group and proposed the term lithotecnon for the true lithopedion

The occurrence of lithopedion formation has been reported as from one to two percent of all extra uterine pregnancies. Masson and Simon reported an incidence of 20 percent Schumann an incidence of 15 to 18 percent and Anderson and others an incidence of 081 percent in 370 cases of extra utenne pregnancy. The incidence has undoubtedly been reduced by the modern practice of early diagnosis and surgical intervention.

Since Venotiss first described this condition in 159, there have been numerous cases reported in the literature 'After adding three cases of their own Anderson and associates in 1951 reported a total of '\$22 cases of authentic lithopedion formation in the world's literature Since that time the following authors have reported cases McClure and Epperson Schwarz 'Roberts Sordo Noriega and Herrera and Casimiro '12 The present case brings the grand total to '58

Lithopedions are usually seen in the cul de-sac and pelvis as an incidental finding at operation when laparotomy is necessitated by symptoms the principal ones are usually dyspareunia and pressure Masson and Simon stated that a lithopedion may not authoritable to the presence of the lithopedion after a quiescent peniod of from two to 50 years. The symptoms are usually mild at first, according to these authors but may become more severe

and be attenued by marked weakness and emaciation in neglected cases, perforation into neighboring viscera or through the abdominal wall may occur

Recently I managed a patient with lithopedion formation and incapacitating symptoms of 11 years' duration

CASE REPORT

A 41 year-old woman para 0 was admitted to this hospital on 28 April 1953 because of lower abdominal pain and 14 days of vaginal bleeding

Eleven years previously she had had abdominal pain diagnosed as due to acute pelvic inflammatory disease. Since that time she had recurrent attacks of lower abdominal pain fever and yellow vaginal discharge. During the seven years prior to admission her activities were greatly limited because of abdominal pain despite periodic pelvic diathermy hot douches and chemotherapeutic agents. In addition to lower abdominal pain she complained of lower abdominal pressure episodes of abdominal distention and severe dyspareumia.

Her attack at the time of admission dated from 14 April and from that time until admission she had daily vaginal bleeding that required from three to four pads per day. She also complained of constant aching lower abdominal pain of a week's duration.

On admission she was obviously in pain but did not appear seriously ill ller abdomen was obese protuberant and markedly tender over both lower quadrants Pelvic examination revealed an orange sized cystic right adnexal mass and a smaller tender cylindrical mass in the left adnexa A roentgenogram of the abdomen revealed an ill defined calcified mass in the pelvis

She was treated with penicillin and streptomycin Her general condition improved until the twelfth hospital day when she developed epigastic pain and nausea. She had hyperactive bowel sounds and some gaseous distention. She remained afebrile but a definite tachycardia was present. Per hemoglobin had fallen from 15.6 grams to 10.5 grams per 100 ml probably due to the vaginal bleeding that had continued. The history of pelvic infection the persistent pain despite cherotherapy distention amenorihea normal temperature and drop in hemoglobin in association with a pelvic mass suggested the possibility of an old ruptured tubal pregnancy with hematoma formation.

On 13 May 1953 a laparotomy was performed under general anesthesia and a 15 cm cyst was found in the right ovary Both tubes were en larged chronically infected and adherent. There was a small cyst of the left ovary with a small parovarian cyst. A 12 cm completely calcified fetus was densely adherent to the sigmoid and incased in dense fibrous tissue (fig. 1). The fetus was removed with great difficulty in 3035 5 5 9.

e course of a subtot l hysterectomy and bilater l salpingo-oophorecmy. The uterus was normal except for adhesions and one small intra irad myoma.



The p t ent withstood the proc dure well her po toper tiv course as normal and she was discharged in good cond t n on the tenth post perativ day Duri g a year s follow up of this patient no abdominal pelvic symptoms recurred

SUMMARY

The present case of lithopedion formation brings the total of uthentic reported cases in the world's literature to 258. The thopedion developed over an 11 year period. The initial attack I acute abdominal pain was undoubtedly the ripture of an extra terme premainer with extrusion of the unattached fettis into the blominal cavity where it subsequently became calcified. The

subsequent periodic symptoms were due to recurrent attacks of pelvic inflammatory disease, secondary to the initial process Menstrual disturbances were secondary to functional cysts of the ovaries and infection

In follow up examinations of the patient for one year there was no recurrence of pelvic or abdominal symptoms

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OINTMENTS IN THE DERMATOSES

Ontments are useful in the therapy of chronic dermatoses but frequently make acute dermatoses worse Often a patient will tell his physician that the ointment that he applied to his poison may made him worse or that the salve that he purchased or which was recommended to him burned him and caused his eruption to spread This is the most common complaint heard in a dermatologist so office. Ointments are mixtures of active ingredients in a grease or in a grease like substance. They are useful in some cases of psoriasis in scables and in a few other skin conditions but are in reality rarely necessary.

-GEORGE E MORRIS M D in GP p 40 July 1954

Congenital Arteriovenous Aneurysm of the

Retina

JOHN F DIAS JE M D

IN 1951 Rundles and Falls in their review of the literature summarized the 31 cases of congenital arteriovenous anoumarized the 31 cases of congenital arteriovenous anoumarized there cases of their own In 1954 Riffenburgh added another case The case presented below is in my opinion an example of an arteriovenous ancurysm of the retina which is a true concential anomaly.

CASE REPORT

On 1 March 1946 a 29 year old staff ser eant was admitted to this hospital with a complaint of frequent spacepe during the previous 14 months. The patient stated that vision in his left eye had been poor since infancy. He said that his father, though living and well had developed poor vision in the left eye at the age of 48 from looking at hot steel, in his work as a blacksmith and in 1937 his vision was (left) 20/40 with glasses. There was no other family history of eye disease or congenital anomals.

The general physical evamination was entirely normal except that pressure on either carotid sinus brought on syncope Roent genograms of the skull showed no pathologic condition. The general course was unoventful and no treatment was given

On the medical crvice it was concluded that there was in sufficient evidence to make the diagnosis of a carotid sinus syndrome the recurrent syncope was considered the probable result of hypotension due to postural effect and possibly due to elements of anxiety and asthemia in the priment as a result of prolonged hard work under tension

Because of the history of poor vision in the left eye he was referred to the eye clinic and was seen in consultation on Il March 1946 His vision was right eye 20/15 left eye faulty light perception. The external examination was normal both pupils reacted to light. The consensual reflex was present Examination of the media and fundi revealed normal appearance of the right eye. A large tortuous vessel which could be followed.

Fm Murphy Arry H p tal W I ham Ma D Das ow 227 U N w Bedford Ma

from the disk around the macular region and back to the disk was observed in the left eye. The first portion was thick walled and lighter in color than the second part, which was of arterial hue but deeper in tint, the two portions were obviously artery and vein connected end to end. The second portion pulsated



Furc I Dairg of the left [ux dus of the patient shoing (I) the dilated a tery-vein and us at onsile it dimete () an area of pigmented macular? I depend attorn (3) poor definition of the disk (4) the etinal vessels some uhat smalle than normal and hidden in many places by the ckening of the retural storm and (5) the deapresented when the patient looks at the ophthal oscope light

when pressure was applied to the globe, the first did not There was an area of degeneration at the macular region A representation of the condition as seen with the ophthalmoscope is shown in figure 1. In attempt was made to locate a retinal camera with the idea of photographing the lesion, but none could be found until after the patient was discharged and could no longer be located.

COMMENT

At the time this patient was examined I made a search of the interature and was much impressed by the monograph on this condition by Wiburn Mason. I was influenced to delay reporting this case by this author's opinion that most of the reported cases were probably early cases of von Hippels disease and would have been so revealed by a follow up of several years Un fortunately because I have been unable to communicate with this patient, a follow up is impossible

In my opinion this was a true congenital anomaly in that an artery and a vein became connected without a capillary bed between end gradually enlar, od to the size observed. The lighter color of the superior portion of the loop. I believe was due to the presence of thicker muscularis which also prevented collapse of the loop when intraocular tension was increased by pressure on the globe. The inferior portion filled with arterial blood had a deeper tint because of its thinner wall which allowed pulsation to show when outside pressure was applied.

Of all the cases illustrated in the literature the case of Rentz most resembled the one reported here. The condition of Stokes patient was also similar although the vessel had a smaller loop Both these patients however had good vision

I believe that this condition of arteriovonous aneurysm of the retina is more common than is ordinarily supposed Undoubtedly many cases in which enlargement of the main vessels is slight are missed in a hasty examination of the fundus others may be observed but not reported

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It is nec ssary to be reminded p nodically that the practice of medi cine does not cons st ent rely of miracles magic bullets or nuclear physics Gowers observation is still true He ssal. If every drug in the world were abolished a physician would still be a useful member of society.

PROMOTIONS OF OFFICEPS

The following officers of the military medical services on active duty in the Navy and Air Force have recently received temporary promotions to the rank indicated

Medical Corps

Robert H Adams Nay USAF Wille M Ady J Capt. USAF William Ald s Lt Comdr USV Jam F Alis n Jr Capt USAF N wton W All b ch, Lt. Comdr USV John J Allen, Capt USAF Claud T And on, Capt USAF Donald C. A d so Lt Comet USA Donald B Bak Cant USAF Anse o L Bri uo Li Comd USN Billy | B uman Capt, USAF John M B II Lt Comdr USN Chatl s C. Benton Lt Comdr USV Henry C. B nz nberg J Lt. Comdr USN Eugene Berger Lt Comdr USN Harry A. Bliss Lt Comd USN Henry H. Boyter Lt Comd USN Frankl n T B yer Lt Corntr USV Richard B B idenbaugh, Lt Corner USV Edward | Bow Capt USAF R b t R. Burw 11 Capt USAF John D Cas y Lt Comdr USA Donald J Cluskey Lt Conzd USV Gra vill C. Coggs Capt USAF Jam s W Cort II Lt. Corrait US Wyndon D Ct nney Lt. Corner USA George F Crik last Lt. Comdr USN John F Curr n, Jr Lt Cometr US's R chard C Daarnd Capt USAF Her h l A. Donemann Cook, USAF Robert M Dean, Capt. USAF P mo F Del Lt Condt USV Walter W D wey Man USAF Alonz M. D nn ll Jr May USAF J ha J Drise II Lt Comdr USV Jck L Ez I Capt LSAF Charl M. Earley J Capt. USAF Earl H. Eaton, Jr LL Comdr USA the cas E. E. hama J LL Corner I vern S. Encks Capt USAF Montgom \ Este dg Lt. Comb US\ Halwin G & Fasland Corner US Ralph Fargotst in, Lt. Comdr US's Jhn F F tte Capt USAF Avn L F ldman, Capt LSAF

Curzon C. Fri J May USAF John C. Finegan Capt USAF Lewis Flore ce Capt. USAF Ad lph A. Fl es It Lt. Comdr USN Simon F dricks Capt LSAF Th mas F Gall gher J Lt. Cornels USN M roy Gasque Jr Lt. Corndr USV Lou H Gessay Lt Corred USA Bernard E. Gorton Capt USAF Thomas S. Gt gg Capt. USAF Jame D Gt n. L.L. Corndr USA William A. Hall Lt Comdr USV Joseph Hamison J Lt Cometr USN Erne t R. Hartmann May USAF Donald H. Harwood Lt. Comdr USV Fred W Hauser Lt Comdr USA Frank R Hends k LL Corner US R bert E. H akl Capt. LSAF Frederick W Holcomb Jr Lt. Coret USA Winthrop C. H pgood Lt. Corner USA Thoma C. H rton, Jr Lt Comer US Charles S Hoyt Capt LSAF Mile H. Hads Lt Comdr USV Grant B Hugh L.t. Cord USV Wyn P Hyatt, Lt. Comdr R be t B Isham Lt Comd USV John J cob Lt. Comd USV Rodn y M. Jarvis Li Cometr US's Harry A. Jakin Lt. Comdr USA Charl H. Jessup Lt. Corner USV Charl A. Johnso Jt Lt. Corner USV wad Il A. Johnso Lt. Comd USV Furni W Johnston, Capt USAF William M. Johnston, Copt. USAF Edward A. Jones Comd USV P ter H. Jon Lt Corner US Lou has a, Lt Cornty USV Pobert E. k. ting LL Comdr US Cha les E. Lee LL Comet LS Edward & Leenan Jr Lt Comdr USV William F Kl sch Copt USAF John C. Kuppinger LL Corner USA Joh M Langstaff Lt. Corner USA When W Lats a Copt. USAF Jose h H Latona LL Comdr LSV

Medical Corps-Continued

Fed kLesma Lt. Comdr USV Da d M L I J Lt Comdr USN William A L tz be g Lt Comdr USN Doual H L wrey Capt, USAF Al d D L wy J Lt. Comeb USV Edw d C. W Lum Lt Comeb USV William G Lyl Lt Comd USN William G M I Copt LSAF Angel J M glus Lt Comdr USN W yo B Natt Lt Comdr USA Wilford E. Mar yrs. Lt. Comeb 115V F & G Mars Capt, USAF
F D. M Carthy Lt Comdr LSN 1 h 1 M D aald, Lt. Comdr USN Thom R V Donn Il Lt. Comd USV Thoma R. M Elhe y Capt. USAF Thoma H M Gust Lt. Comdr USV I h F M V y Le Comdr LSN Wood ow W Me LL Comd US Alv ham A. M k Iburg Lt Cometr USN Karl F M ak, Lt Comdr USN
De Meye J Lt. Comdr USN
Ma I M h I Capt, USAF David R Mill d J Lt Comdr USA Will am J M gabs b Lt Comeb USN H man R. M or J Lt. Comeb USA R chard k M gan LL Comd USV J hap Mur y Capt. USAF S mo D Muer y Li Cometr USA Thom M. Obe a, Capi USAF R bad W Olm ed Lt. Corndr USA Cal R. Ope baw Lt Corndr USA J ph P d va Lt. Comdr US\ Harold P Par Lt. Comdr LS\ Antho y J Par Lt. Comd US\ Roy W Park Lt Comdr USV Jh K Pear Capt. USAF J me H A P k J LL Condr USV Elmer D. P (By Capt. USAF Ar hur P o. J Capt. USAF War FP II Lt Comd USV Pul C. P is Capt. LSAF Tillum E. P n, Capt. USAF O UP ke LL Comd USV Pearl H P rs Capt USAF J b D P Lt, Comdr US\ J ha B. Plauch Lt. Comdr US J ha E. Pul ski, Lt. Comdr LSV Al MR be B. LL. Corndr USA

Chal P Roo J Comdr USN Sol mo R be g Lt Comd USN Da d B Rul n. L.L. Conetr USV Docald C. Sams n, Lt. Comdr US\ Eug W Saus Lt Comdr US\ Anh yT Sc is Lt Comeir USV J na G Sc LL Corndr USV P Sch l b g LL Corndr USV A hur L Sche bel Lt Comdr USA Pul R Schl b Lt. Comdr USN Bl d H. Schw ng May USAF Rob G Schul z, Lt. Comdr USV Lyma J Sc p et M / USAF H ma S. Shapir Lt. Comd USN J hn E. Sha ta J Lt Comd USN I hn H Shell y Lt Comdr USN 1 m R Silbe Capt USAF R bl y D Smith III Capt USAF Faklyn C, Spur May US \F N ma W tak Lt Comele USA P Iha P Stapl J M , USAF Arthur S ff 1 Lt Comdr USN Max A. S Capt USAF J kP Su g Capt. USAF Alex d C. Stua t, Capt. USAF George C. S LL Comer USV M I in R. Swalf d Copt USAF Dani I W Thoma Lt. Comd USV Geog P Th ma J Lt. Comdr USV W 1 D Thoma Lt. Comd USN Chal R. Thom Lt. Comdr USN J me H. Thorp Capt USAF R ber D T w Capt. USAF B na d Tuma k LL Cometr USV Stanl y Turk | Lt Cornd USN Al C. Two Lt. Cornd USN I m R. Upp Capt. USAF Herbert V lk, Lt Cometr USV Thoma E. V ad Har Capt. USAF R hard L Voo b Capt USAF I h W W bl. Lt. Comdr USA Julia E T rd Capt USAF All S. T d May USAF

By V Th y LL Comat USV

Fra P A. Tilliam Lt Comat USV Gerald E. W ne get Comdr USN Calvi W Woodrull Lt Comdr USN Mill agt O Y ung Lt. Comd US\ Chal M. I. Za gl Lt Comdr US\ Ry T Zimme J Capt USAF

Dental Corps

Thad L And WS Capt. USAF Edward D Ayr Capt. USAF Frank E. Bar nge Capt USAF Be tram R. Bohn, Capt. USAF Watt 1 B to is LL Comdr LSA

Isra I Coope Lt. Comdr USN Edwa d E. Da May USAF Gr dy D Donatha J LL Comet USA Raym nd C. Duk Copt USAF Donald F F LI Comdr USV

Dental Corps-Continued

Paul Foreman Lt. Comd USN
Ir ing S. Glasnet Li Comd USN
David Green, Li Comdr USN
Jo ph G Ha cock Li Comdr USN
Ge g W Johnson, Li Comdr USN
Frank M Lapeyr I e Capt USAF
Gusta L off Li Comd USN
John L Luca Capt. USAF
Wan D McCool Lt. Comdr USN
Harold E. Milkey Capt USAF
Max B Musser Li Comdr USAF

F ed J Novak Capt USAF
Wilsam C, OR Illy Jr. Capt. USAF
J ck A Rampt n Lt. Comdr USAF
J ck A Rampt n Lt. Comdr USAF
John R Saunde s Capt USAF
Aaron Schlecter Lt. Comdr USA
John N Schrood r Lt. Comdr USA
Charle T Schw tha J Maj USAF
Charl P Thom, Lt. Comdr USA
Gemid S Wank Capt. USAF
Charl P Thom, Lt. Comdr USA
Charle L Willi ms Lt. Comdr USA
Charle L Willi ms Lt. Comdr USA

Medical Service Corps

Albert L And e Lt. Comdr USN Gerald J Armans Capt USAF Carl P Calh un Lt. Comdr USV Pierc F Carney Maj USAF William H. Coffm n Maj USAF Charl M Dani l Maj USAF Mal Im W Day Capt USAF Raymo d C D ck n Capt USAF Edward Dominguez Lt. Comd USV Jm R. Gambl J Capt USAF Keith C. Gill tt Capt USAF Edmund H. Glesson Lt Corner USV John L Gr May USAF Da d F Hersey Capt USAF W yn B H witt, Lt. Comdr USN Jam s W kind Lt. Comd USV J per L pr to Jr Capt USAF Charli W L Lt Comdr USV Ernest W Littlet Capt. USAF Samuel C. Marcus Lt. Comdr USN L e E M Clung Ist Lt USAF

R chard E. M Kenzi Capt USAF I hn S McNeil 1st Lt USAF Phil p A Palumbo Capt. USAF CluL Patter n Lt. Comd Jhn H Patrik Jr Maj USAF M tvin C. Reed Capt. USAF Charle A Ric Lt Comd USN R be t F Rigg Lt. Comdr USA Robert J R ft May USAF Jan D R g Capt. USAF Marvin L. Sc tt, Capt. USAF Ruth C. Shatt tly Capt. USAF Malcolm F Slayt Var USAF William A Staub Capt USAF Chal J St fka May USAF L Ido B Th ma Capt. USAF] m s E. Thomp o Lt Comdr USV Domenic A. Vaval 1st Lt USAF Charles R. W nn ma her Li Comdr US' Joe D W 1 h Capt USAF Chester D Worth Lt Comd USN

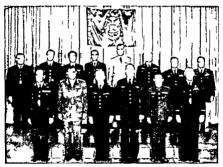
Nurse Corps

Mary E Aldhize Capt USAF
Virgin a M. Alean Capt USAF
Rt A A g r 1st Lt USAF
Barbara W. Atkin Capt USAF
Ra h 181 k Capt USAF
Ra h 181 k Capt USAF
Doc thy A. B w r Capt USAF
Ell a F rt II Capt USAF
Ell a F rt II Capt USAF
Ell a F rt II Capt USAF
Ell a F rt II Capt USAF
R mary G thett Capt USAF
R mary G thett Capt USAF
Norma H kolodzi [czyk 1st Lt. USAF
Th od F Latino e Capt USAF
II S. L wis 1st Lt USAF
Marc L L g toa Capt. USAF
S zana E Luch ck May USAF
S zana E Luch ck May USAF

Do othy E M Hugh Capt USAF Carl B M yer Ist LL USAF Lilly A N kata : Ist Lt USAF R ta O Hat Capt. USAF Clara Pett Capt USAF Samh J Raff rty 1st Lt USAF J n H. Richards n, Capt. USAF H tminia D. Rogers Capt USAF R g na M Schaf r Capt. USAF Ruth F Schneid Capt USAF Mildred F Schooley Capt. USAF Do othy L Sh Id Capt. USAF Ruby L Thacker Capt. USAF Sarah P Wells Capt USAF Mary E White Capt. USAF Annie V Williams Capt USAF HIRS Willman Copt. USAF

OFFICERS OF 25 NATIONS, INCLUDING 13 SURGEONS GENERAL VISIT USAF BASES

The surgeons general of 13 allied air forces and 14 other foreign military medical officers representing 25 countries were the official guests of Major Gener I D n C Ogle USAF (MC) Surgeon General U S Au Force on a visit in March to Air Force ba es in Alabama Texas and Ohio following the twenty sixth annu I meeting of the Aero Medical Association in Wash neton D C



The surgeo ge er I f 14 a force we ph t graphed the U.S. Au Force School of Anata V. der. 26 Mar b 1935 Fo trow I fi to right Brig G. n. Heael Laf at Span. Br g. Cen. A. M. Ge. a. Eppt. V. f. Gen. P. B. geret F. nc. Vaj G. n. D. C. Ogl. U. at St. tex. Vaj C. n. H. b. Li R. p. bi. f. Chi a. Br g. Gen. Johan E. Brosser N. therlands. R. w. I ft to ght Capt Joudal Ad Sy a Maj S e 10 o Ce dal s. Colombia Arr V ce Commodor Soebard H ripolocksto Indones a: Gp Capt E A R A d b Ind a. M j R. H Bathgate-Johnston Rhod ia and Nyas land Col T Y R bie F nl nd Col Pye g-Vai Pak Rep bli of Kor a, Lt Col P lagio G Pol misa a, Phil ppin s.

Traveling by military aircraft the group inspected the medical training and research facilities at the Gunter B nch of the School of Aviat on Med cine Gunter Air Force Base Ala the U S Air Force School of Avi tion Medi ne Randolph Air Force Base Tex. and the Aero Medical Laborator, Wright-Patterson Air Force Base Ohio

A MESSAGE FROM THE A M A

The May issue of this Journal carried a brief review of the report made by the Hoover Commission on Federal Medical Services as it was applicable to our veteran population. We further discussed the need for conservation of this medical manpower and resources wherever appropriate and suggested that such economies could be used to increase civil defense preparedness

As to the findings of the task force of the Hoover Commission on Federal Medical Services in the military, the report noted that the Department of Defense is in a declining economy in the field of medical care in spite of this, however, the report leaves no doubt that the Department of Defense comes in for its share of lack of coordination and the huge wastes in Federal medical services

A summary of three of the five metropolitan areas surveved with respect to Federal hospital services showed a very high number of unused beds for the Armed Forces For example, in the San Francisco area there were 11 Department of Defense hospitals with 7,806 beds of which 4,681 were unused The New York area military bed capacity was 2,238 but 2,009 were unoccupied in the Norfolk area, with 3,051 hospital beds, there were 1,458 unused By services, the Army had 48 percent of its beds occupied in the San Francisco area while the Navy and Air Force each had only 38 percent occupancy. In the New York area the Army had a 43 percent occupancy, the Navy, 37 percent, and the Air Force, 48 percent occupancy At the Norfolk area the Navy had a 70 percent hospital bed occupancy, but the Army and Air Force each showed only 20 percent occupancy of their beds

Turning to the hospital construction program of the military services, the survey indicated further lack of coordination and vinste of 106,403 beds in 1952, only 57,514 were occupied in the same year expenditures for hospital constructior amounted to \$11,822 000 in 1953 military hospital beds totaled 102 280 with only 49 520 occupied nevertheless hospital construction was \$6 071,000 in 1951, there were 91 097 beds with 39,628 in use, and construction reached \$49 612,000 Estimates for 1955 are hospital construction, \$62 227,000, total of 93,152 beds with 58 899 unused

From th Council \ u u l D fen of th Amrcan Medical As oc ron The 1 w and op: 1008 express ed re or a sparily thos of th Department of D f se —Cduor

Such waste is not limited to money alone. The technical per sonnol required to operate these parth filled facilities is a drain on the medical and health technicians much needed by our civil ian population. If it be argued that these excessive practices are needed against war emergency, can it not be answered that had these funds been u ed to relieve the civilian situation the civilian hospitals would equally be available for war emergency.

A most interesting and revealing item of the report concerns the length of patient stay in Federal hospitals. For an appen dectomy in a civilian hospital the average length of stay was found to be 78 days while in an army hospital active duty per somel spent 19 6 days and others excluding veterans spent 99 days for an appendectory. In a naval hospital the time was 20 3 days for active duty personnel and 96 days for others excluding veterans. Civilians in a general hospital spent but 14 days for a tonsillectomy but in an army hospital active duty personnel spent 161 days and others 30 days while at a naval hospital the average was 133 days for active duty personnel and 25 days for others For hemorthoidectomy and hernicotomy (inguinal) a similar sizable increase was indicated by the military in comparison with civilian hospitals.

Militars personnel on active duty receive relatively large arounts of hospital service an average of 8 days a year (or clusive of battle casualties) as compared to 1 day a year in general hospitals for the United States population " the report stated

Medical care given to dependents of ervice personnel is large and has grown enormously in recent years. On an average day in 1953 they occupied 6 300 beds in military hospitals and received 23 000 outpatient treatments. In 1948, some 42 000 babies were born in military hospitals in the United States. In 1953, the number yeas over 14,000.

The report recommended that the medical and hospital services of the three military services be modified into a much more closeth coordinated putter in which one service would be given re
sponsibility for medical care in each region of the United States
Within this broad recommendation several specific recommenda
tions were made. Armed services training programs for medical
officers vere also recommended for strengthening

The figure as he par grash, for period has a debetwed January and August 1948 or from table published as to fire epor of the Hower Comm. March 16 1949—If deter

COMMENT ON A M A MESSAGE

The preceding article, "A Message From the A M A," was submitted by the Secretary of the Council on National Defense of the American Medical Association and is published at the request of the Assistant Secretary of Defense (Health and Medical) A message from the A M A has been printed in the Journal each month since January 1954 This was done to facilitate the communication of information from organized medicine to the physician in uniform

In the present instance, special comment appears to be neces sary. The current communication largely consists of paraphrases or direct quotations from the report on Federal Medical Services made by the so-called "Hoover Commission" in February 1955 (incorrectly attributed to the "task force" report) As such, and because of the fragmentary reporting of items touched upon, it tends to perpetuate and actually further exaggerate unsubstantiated charges of lack of coordination, waste, excessive person nel, and excessive bed capacity in the military services. These charges are made in broad, general terms, while illustrations offered to substantiate them either do not accord with the facts or rest on very serious misinterpretations of the available facts.

In paragraph 2 the message states that there are "huge wastes in Federal medical services" However, repeated comparisons of governmental with private hospital programs have demonstrated that the navy medical care program for example, utilizes less personnel and achieves a lower cost per patient day than any other comparable program, while maintaining the highest quality standards During fiscal year 1954, the cost per patient day in naval hospitals was \$14.84 This compares most favorably with published costs in private hospitals ranging from \$18.69 to \$27.55 per patient day. The all inclusive charge of huge waste is not justified.

Paragraph 3 recites statistics designed to demonstrate "a very high number of unused beds for the Armed Forces," but fails to mention that a large proportion of the "unused beds" are strictly in moth ball status. They are not operating heds, are not budgeted for, and are not staffed. They practically all are of tem porary construction, remaining from World War II Their association with operating facilities is solely for security and fire watch. They cost relatively little to maintain and have been retained specifically for use in emergency.

Nowhere in the recitation of occupancy figures ranging from 70 to 70 percent is there even a hint of the fact that these statis tics are based on total constructed bed capacity, including tem porary structures held over from World War II or earlier, as ad mirably economical insurance against disaster When actual operating beds are considered as in Table 14 on page 52 of the report of the Hoover Commission Task Force of February 1955 it is seen that in 1954 there was 81 percent occupancy of nave bods and that the average for all the Armed Forces was 72 percent.

The idea advanced in paragraph 4 that new hospital constructhe local tuttes incoordination and waste disregards the fact that during the period cited (1952 1955) new construction at least for the Navy consisted of the replacement of obsolescent hospital facilities During the same period constructed navy heds actually decreased by 13 251

A serious error appears in paragraph 5 in charging excessive practices in use of personnel it is stated that The technical personnel required to operate these partly used facilities is a drain on the medical and health technicians much needed by our civilian population. The fact is that no technical personnel are being used to operate unused facilities staffing being related to the patient load not to bed capacity

Finally in paragraph 6 many statistics are cited to show that after certain surgical operations military personnel on active duty are hospitalized longer than civilians. No reference is made to the fact that these figures refer to patients discharged in early 1948 before some of the more recent medical advances. More im portantly neither this nor the following paragraph mentions that whereas a civilian can convalence at home under the care of his family military personnel usually cannot be discharged from hos pital until fit for at least limited duty

There is another point which is ignored in these comments and that is that military medical facilities cannot be compared to civilian medicine at all points precisely because as a Defense organization they must be like the firemen and fire engines in our home town always prepared for a holocaust

Medical officers should recounize that the American Medical Association in this instance is not speaking for all sections of the profession

> B F AVERY Cantain (MC) USN Associate Editor

36 NEW SPECIALISTS IN AVIATION MEDICINE

Thirty six Medical Corps officers of the U S Navy and Air Force have been certified in aviation medicine, following examinations given in Washington, D C, on 17, 18, and 19 March 1955, according to an announcement by Dr Ernest L Stebbins, secretary of the American Board of Preventive Medicine The new specialists are

G orge F Bair III Col USAF Lynn S Beals Jr Capt. USN Edward L Beckman Comdr USN Laur no A Bilotta Col USAF Robert F Carmody Capt USN Jos ph A C nnor Jr Lt Col USAF Antho y C erw aski Col USAF William A DeF s Lt Col USAF N R bert Drummond Lt Col USAF John W Epton Lt Col USAF Lind ay J Er n Col USAF F. etett C. Fre Col USAF Ri hard L. Frun Capt USN Lucio E Gatto Col USAF Geor A God : LL Col USAF Ph lip G K il Lt Col USAF W n E Mein Capt USN Fra k H Lan Col USAF

R s B Laut ph 1 r Comdr IISN

William H McC rt 11 Col USAF
Sh tma M P body Comdr USN
Cril E Prett Comdr USN
Badl y W Prio Lt Col USAF
Courand N Roth Lt Col USAF
Courand N Roth Lt Col USAF
Jack C Shrader Lt Col USAF
David G Sim S Maj USAF
Fr d rick S Sp gel Maj USAF
H nry F St inbock Lt Col USAF
Claren A Tin man Col USAF
Alb t W Va S kle Lt Col USAF
Alb tw Va S kle Lt Col USAF
CalE Wilbur Comdr USN
CalE Wilbur Comdr USN
Pul E W ght Lt Col USAF

Raymond A Lawn Col USAF

Emm et C Lentz Col USAF

DEATHS

SMITH Edwin Carl Captain MC USAR Manlius N Y 548th Medical General Dispensary Loca, graduated in 1947 from the University of Rochester Shool of Medicine and Dentistry appointed a first lieutemant 17 Augus 1953 ordered to active duty 1 July 1954 died 30 March 1955 age 32 in korea of a gunshot wound

THE MEDICAL OFFICER WRITES

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Reviews of Recent Books

SHOULD YOU DRINK by Charles H Durfee Ph D 152 pages The Macmillan Co New York N Y 1954 Price \$2 49

This small volume is written for and about the problem drinker I is a warm understanding book and also an optimistic one written in nontechnical language and intended as an informal discussion of the symptoms of compulsive drinking and of rehabilitation through therapy.

Without probing deeply into causes the author proposes that compulsive drinking is a psychologic problem—a habit system developed through learning and supported by escape motives. The treatment is then one of re-education in a supportive environment. Such common technics as reassurance and in expression are used but certain invovations are also suggested. In the informal atmosphere of a "country inn" the patient engages in congenial occupations and long often insoleduled conversations with the therapist. The patient is free to leave if he chooses return to the city to business obligations attend social gatherings and dink alcoholic beverages. The author believes that because the patient must live in a drinking society he cannot be expected to work through the problem in isolation. Most of the patients however voluntarily cease drinking eally in therapy

The professional reader will not find this a satisfying book Few data are presented and the outline of the remedial work is so skerchy as to leave most questions unanswered. One wonders how the authors methods would function in a rushed city clinic or in a class of dinke s who cannot afford to sojourn in the country. These criticisms are not applicable however for the book is not intended as a technical treatise. L should provide food for thought as well as hope for the audience to which it is directed —HAROLD L. WILLIAMS. Capt. WIC USA

THE YEAR BOOK OF OBSTETRICS AND GYVECOLOGY (1954 1955 Year Book Series) Ed ted by I P Geenhill M. D 544 pages The Year Book Publishers Inc Chicago III 1954 Price 36

This is an illustrated abstract of the major portion of the world's literature of the past yea, concerning obstetrics and gynecology. The editor has selected each arkle for some important contribution it makes. In addition he discusses and compales them with previous articles and with his own broad experience as teacher and autho-

Authors of scientific papers differ in their ideas and conclusions and even in their stallistics so that anyone who abstracts their atticles and contributes his own critique must emplor a sense of constitutive compalison and a very conservative outlook. This the editor has done

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admirably. He has selected his m terial from about 40 American and almost an equal number of foreign journals. The Amer can Journal of Obst trics and Gynecology and Obstet ics and Gynecology provide over 150 articles however all representative foreign and domestic scientific journals are well represented. An alphabetical subject index and an author index is included

Among almost 200 papers on obstetrics the subject of labor including its management and c inplications contributes 75 papers and pregnancy its physiology and complications 94 Of over 175 articles about evnecology there are more than 40 papers on malignant tumors and on the subject of infertility almost the same number Endocrinology has been held to a conservative nine papers

This yearbook fills a definite need as a handy guide and reference to busy physicians but of course an abstract is not a substitute for the origin 1 article -EDWARD T KNOWLES Capt (MC) USN

The major improvement of this v lume over the first edition is the addition of a ch pt r on facial g owth nd dev loom nt. The chapt r includes dentition along with an excellent discourse on malocclusion which should be of considerable terest to the pediatrician

The chapt on premature dev lopment is divided int syst ms and the opin ons on the c us s of prematurity and differences in maturity nd mmaturity are well done. The chapter on behavior developme t includes not only the g id nee of nfancy presch ol p od nd child hood but adolescence a well The st tement that ove emph sis of problems in the period of adole cence may do more harm that good may be challenged by some reade. There are 70 figur and 48 tables in the book. Some readers would have preferred fewer height weight table for eas er r ference but most of the charts are import at for a book of this type

The book sho ld serve a useful purpose for the student and resident as well a for the p diatric an and othe clinicians in the branches of med cine closely rel ted to this specialty

-SHERL J WINTER C pt (MC) USN

Thi is an edited symposium at the Veterans Admin tration hospital in Long Be ch Calif October 1953 The book is divided into six chapters each with single auth r nd usually o or mo e discussants It is not indexed but reference appear at the ind of eich chipter In reporting research proje to consid abl psychologic t at dat with in

terpretation and discussion are included. The chapter devoted to auto nomic functions contains several tables and graphs

The title is provocative but nothing is settled by the participants nor does it appear that the intent was such The significance of the book is that it records experimental data on the subject and reveals the open mindedness of the very capable discussants

The book is stimulating and easy to read. It will undoubtedly be the object of criticism and attack which is traditional for any new approach to cancer research—JAMES M. BAILEY L. Col. MC. USA

TREATMENT OF ACUTE POLIONYELITIS edited by William A Spencer M D 134 pages illustrated Charles C Thomas Publisher Spring-field III 1954 Price \$3.75

Anyone who has known the agonizing perplexity of treating the pa tient with bulbar poliomyelitis will keenly appreciate this synopsis which is based on experiences with 1 000 patients with "suspected" poliomyelitis admitted to the Southwestern Poliomyelitis Respiratory Center in Houston Of these 246 were ultimately classified as severely ill with poliomyelitis. The acute and postacute phases of the disease are discussed in detail Most of this book is devoted to the diagnosis and care of patients with respiratory complications and particular em phasis is given to the use of the various types of respirators currently available The care of the patient with tracheotomy indications for this procedure and the problems involved in its termination are well summarized Most of this information will be helpful in the management of patients with or without tracheotomy requiring care in a respirator The sections concerning metabolic and circulatory complications leave something to be desired but this is more a reflection on the general state of knowledge in the field than on the editor of the contributors who are to be congratulated on the emphasis which they have given to the diagnosis and management of the emotional and social aspects of the disease

The volume is inexpensively bound. The material is presented as a series of synoptic tables accompanied by cursory notes of explana too There is a useful appendix which includes tables of average ventilatory requirements salt and water requirements muscle reducation programing muscle testing and programs for maintenance of joint range of motion A bibliography of 24 references is included. The book is of interest and importance as a guide to all those not fully acquainted with the care of the seriously ill patient with poliomyelitis particularly interns and junior residents assigned to medical and pediatric services—JOHN & SPITZMAGEL, M. J. MC LESA

INTERNS MANUAL by Arthur Bernstein M. D. 297 pages illustrated Year Book Publishers Inc. Chicago III. 1954 Price \$3

This small paper-bound book is the manual for interns at the Cook County Hospital in Chicago and represents a guide to the care of pa tients by the house staff of that institution. The author has organized the subjects alphabetically and uses many cross references to avoid repetition.

100

A remarkable amount of information much in outline form is con include such diverse subjects as blood dyscrasias anesthesia fractures burn therapy et cetera thus representing the matters important to a house officer in the treatment of patients with routine as well as emergency conditions. Certain instructions my not apply so well to other institutions but this does not detract from the value of the nual. The section on fractures is particularly well done concise and complete and is one feature that other house staff manuals often owner only skerchilly.

As a house staff m nual this book is excellent and may be profitably used by all physicians for ready reference in emergencies laboratory procedures antidotes fractures and many other phases of med cine It is small enough to fit easily into the doctor's medical hap

-DAVID L DEUTSCH LL C L MC USA

HUMAN LIMBS AND THEIR SUBSTITUTES by P l E Klop teg Ph D Sc D od Pb l p D Wl M D 844 p gc till ut t d M Graw H II B ok Co In N w Y k N Y 1954 P \$12

This book is a report of the research and development program in artificial limbs conducted under the direction of the N tional Research Council since 1945. The text repre ents the combined efforts of 30 experts including surgeons engine is phyiologists psychologists therapists prosthetists chemists and minifacturers. As a result of this comprehensive research and dev lopin its program the latest components mechanisms in the properties of the management of an amputee including a definition of the problem the team approach the preop ative and surgical care pain patterns psychological adjustment and fitting of and training for use of prostheses are discuised. The influence of improved prostheses on sites of amputation is emph sized cineplastic technics and fittings for the upper extremity are dicussed, indicusted in the suction socket prosthesis for the lower extremity is fully evaluated.

The text is amply illustrated with graphs line drawings and half tones. The text is written in cl ar not too technical language which makes it easy to tead. A few minor errors in indexing and labeling do not detract in any way from the book which in general is well indexed. Each section is augmented by an excellent bibliography All interested in the problem of imputations should find this an instructive and valuable reference book which should be in the library of all those who have the occasion to participate in any ph se of the management of amputees. MOSEPH & BACKH CL. No. 115A.

SUPERVISION OF NURSING SERVICE PERSONNEL by Cecilia M Perrodin R N M S De Paul University Chicago III 622 pages illustrated The Macmillan Co New York N Y 1954

Supervision thoroughly understood and intelligently employed is a vital factor in providing the most effective nursing care in both large and small hospitals. In this book the author has "clarified the need, principles technic and values of supervision in nursing service.

The purposes of this book are to demonstrate the nurse supervisor s role as a harmonizer and key figure" between the administration on the one hand and the nursing personnel and patients on the other to serve as a guide to hospital and nursing administrators supervisors and teachers in this age of supervision and to aid the student in nursing education programs by providing reference material on super vision as differentiated from administration

The book is well written Following each of the eight parts is an extensive bibliography to facilitate and encourage further reading and study. The discussions include the philosophy of supervision and the significance of psychology sociology and leadership the principles both general and specific of supervision the contribution of education business and industry and the results of good supervision as seen in patient satisfaction personnel stimulation and growth administrative gains good public response and the growth of the supervision and supervision

Nursing administrators supervisors and educators will find this a valuable guide in developing and maintaining an effective super visory program. To the student in nursing education and administration it will provide a much needed reference for supervision as it applies to the nursing service—AILEENE BRIMMER May USAF (AFAC).

THE BANE OF DRUG ADDICTION by Orin Ross Yost M D 155 pages
The Macmillan Co New York N Y 1954 Price \$4

This book deals with the evils of drug addiction as they affect our civilization today. It is well organized and amply documented with vivid selected case histories from the files accumulated by the author during 25 years of professional experience with a great number of addicts.

The underlying causes of addiction are emphasized and the medical profession is challenged to recognize the condition as a disease requiring prompt and proper treatment. The danger of spreading the disease especially among adolescents is pointedly described. The habit forming drugs are classified and the criteria of addiction defined with illustrations by tables and outlines. The symptoms of addiction and the abstinence syndrome are adequately presented.

The chapter on treatment outlines the steps of withdrawal rehabil itation and re-education. In view of the difficulty of carrying out these

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measures and the high rate of relapses coupled with the all too frequent interference of relatives and friends, the author concludes that regardless of the particular drug very few cases of drug addiction of long standing in adults are permanently cired Consequently the real cure lies in prevention. The social moral medical legal and renal measures required for control of drug addiction are discussed n the last chapter The book is easy to read ind the format is excel lent There is an adequate glossary of the jargon of addicts and the mdex is complete. The book is recommended to all physicians for rformation and ref rence in the diagnosis and treatment of drug ad diction. -- DAVID C. GAEDE Capt (AC) 155

THE PYRAMIDAL TRACT by A M Las k, M D Ph D Ame ca Le ture
Se se P bluca on Number 233 A 1 graph Th Bann tone
D is on of Am can L ture in Ana cony Ed d by Otto F Karp
Ph D M D 166 page Chal C Th ma P bl be Spegf L III 1954 P \$4.75

The author's stated purpose in this monograph is to collect and correlate the known facts on the pyramidal bundle n an attempt to ascertain its true status in med cine " As he says "it was one of the first fasciculi to be observed n man and it was assigned a major function. The results of numerou inve tigat ons over many years did not greatly alter the original concept of the tract until recently

In the early chapter the author describ s the speculation over the centuries as to the teasons for paralysis contral teral to the side of brain damage. Then the history of the next 160 years concerning the gross observ tions and dissections of the tr ct i briefly discussed Follow ng this cha ters are d voted to an historical account of his tologic studies of the normal trict and an account of efforts to under stand the pathologic les ons of this tract. The tradit onal signs and symptoms of pyramidal tract disease surgical oper tions involving the tract and the results of animal experiments are then related Also neluded are outlines of b sic pyramid I tract investigations in man and in animals and bibliography of 299 references

Phys cians concerned with paralys s secondary to disorders of the nervou system will find this small book of considerable interest

-IOHN W KENSLE Col. NC USA

SENTENCE COMPLETION by Jame Quater H Isoppl d Floren R

M I America L ctur Seri Publication Numb 230 A Monograph
in Th B nner on D m on of Am ca L ture in P yehl gy
edd d by V lly Harroue Ph D 177 page Ch I C Thom Pub-1 h S ingf ld Ill 1954 P \$5 50

This monogra h s an initial report on a new type of test in which the authors have selected 3 incomplete sent nees which seem to call for relatively impersonal responses rather than for report on personal problems. After a brief discuss on of the criteria used for selection of the st tements a list follows of characteristic completions for each statement bas don result obtained from 1 700 persons. The

technic of interpretation is demonstrated by a detailed analysis of one record and the presentation of 27 illustrative records from a wide variety of psychiatric patients

The use of indirect beginning of a sentence does not threaten the person as much as the direct type of opening and he is encouraged to give a wide variety of expression. This makes the test more flexible and produces more projective material than previous sentence completion tests. On the other hand, the flexibility of the test reduces its objectivity and it will be difficult to determine the validity or reliability of the conclusions drawn from a single record. The authors are aware of this situation but rake the view that the validity and reliability of projective technics depend on the skill and training of the examiner using the technic

The book presents interesting test material which indicates the test can be an effective economical instrument in the hands of an experienced clinician Its simplicity and minimum of structured material however may be pitfalls for the inexperienced examiner.

-FRANK J HAMMER Capt MSC USA

FLUID THERAPY by James D Hardy M D 255 pages 77 illustrations Lea & Febiger Philadelphia Pa 1954 Price \$5 50

The author has succeeded in presenting a concise discussion of total fluid therapy. The book consists of 19 chapters with chapter 1 devoted to the general physiology of body fluid metabolism. In a clear and simple manner there follows a discussion of fluid therapy that presents a classification of states of water and electrolyte imbalance and methods to diagnose and treat these derangements.

Special chapters are devoted to the management of clinical problems of fluid imbalance. Included are chapters on intestinal obstruction burns fluid therapy in infants children and elderly persons and problems peculiar to urology neurosurgery and orthopedics.

Nothing new or startling has been presented in this book. The reader is informed how to decide when a state of fluid imbalance exists and then is given a practical guide to therapy. The table of contents a detailed outline of subject matter in each chapter and adequate references will provide students interns residents and practitioners of the medical and surgical specialties with a ready source of reference to all aspects of fluid therapy.—GEORGE F. PEER. Col. MC. USA.

STELLATE GANGLION BLOCK by Daniel C Moore M D 280 pages Charles C Thomas Publisher Springfield Ill 1954 Price \$10 50

This is a first edition of a text concerning the technics for interruption of nerve impulses from the cervicothoracic sympathetic ganglion. The fundaments of the anatomy and physiology of the cervicothoracic portions of the sympathetic nervous system are discussed including the necessary equipment various types of drugs and ancillary diag nostic equipment needed. The second part includes the technics used by the author and the signs and symptoms of a technically successful block

An important chapter on complications outlines problems relevant to patient response to drugs errors in technic and inadvertent involve ment of adjacent structures in the field of injection Part three of the volume ascribes the use of these technics as applicable to diagnostic and therapeutic problems in more than 50 disease conditions associated with (1) vascular disturb nees of brain heart lung upper extremities and face (2) overactivity of sweat and mucous glands (3) bronchiospastic conditions and (4) cardiac arrhythmias of sympathetic derivation. The technics of stellate ganglion block used by 33 other authors are described in their original details.

The illustrations colored and black and white plates are in excel lent detail accurate express we in design and purpose and follow the text so as to be useful. The index and bibliographies are very satis factory. This text is adequate for the novice who may wish to learn the technics of stellate ganglion block as well as for the consultant who may wish to become better info med as to the many possibilities in the application of the Augenostic and therapeutic instrument.

-HARVEY C SLOCUM C ! MC USA

STANDARD VALUES IN NUTRITION AND METABOLISM drd by E tt C Albrit M D 380 page W B S d C Pb lad lphi P 1954

This book is a compendium of 160 t bles of biologic data prepared by a large grop pol experts organiz d under U S Government auspices. There re 223 pages of tables and 16 pages of diagrams with thousands of items of quantitative d ta and their bibliographic references. Much of the information deals with animals plants and microorganisms although human data are also included.

This book represents a gigantic effort at correlating metabolic and nutritional info mation from the world's liter ture and as such will be indispensable to the advanced research worker

-S O WAIFE LA (MC) USNR

PSYCHIATRY AND COMMON SENSE by C S Bluem I M D 259 p ge
Th M m lla Co N w Y rk N Y 1954 P 33

This book is writt n to make the various emotion I illnesses more understandable to the layman In order to do this the author describes all psychiatric disorder in terms of organization disorgan zation and nonorganization of the personality

The early chapters discu personality development including the behavioral disorders some organic syndromes and some psychoses and immaturity and other neurotic and psychotic disorder. Other chapters discuss psychos m tic diso ders psychoses and alcoholism in the latter chapter the author of lime that 58 percent of 550 patients.

remained sober under antabuse therapy Another 20 percent had one or more relapses then received antabuse and remained sober. Thus the treatment was 78 percent effective. This suggests a more optimistic view of this problem than that voiced by other authors and might possibly be clarified if the author indicated his method of selection of patients his follow up procedures and the time interval.

The chapter on treatment is an orientation toward understanding and avoiding emotional disorders. Some comments may raise an occasional eyebrow as for example. It would seem then that the seeds of paranoid thinking are to be avoided.

In the final chapter the author discusses the personality of men in politics. The reviewer found little relationship between this chapter and the rest of the book and wondered how the observation that dominant persons tend toward positions of leadership contributes toward the implementation of his suggestion that certain types of wise and mature men might make sounder politicians.

While this book may have some value to the layman and possibly to the nurse who wishes a general orientation to psychiatry. I believe that it has little usefulness to the psychiatrist or to physicians in other fields. For the rare occasion when the patient is to be advised to read about psychiatry there are several other books which might be more suitable for this purpose and which present the concepts of psychiatry in a clearer fashion —WILLIAM HAUSMAN Mai, MC USA

CLINICAL ORTHOPAEDICS by Anthony F DePalma Editor 240 pages illustrated J B Lippincott Co Philadelphia Pa 1954 Price \$7 50

This is the fourth of a series of publications which is sponsored by the Association of Bone and Joint Surgeons. To be fully appreciated it must be remembered that each volume represents only a limited part of a long range plan designed to provide an outlet for orthopedic material of interest and to augment other channels of literature.

The book is divided into a section on joint fractures and dislocations and one on general orthopedic subjects. In general each subject is and one on general orthopedic subjects. In general each subject is well presented adequately illustrated and where applicable followed by an excellent bibliography. One who keeps abreast of current literature may be justly critical of the two articles on fractures of the patella which add little to this subject. Garrett Pipkin uses seven pages to discuss dislocation of the carpal lunate and a presumptive test for reduction. He de emphasizes the value of good roentgenography in the management of this injury. Juan Farill describes still another method of treatment of congenital dislocation of the hip and admits the inadequacy of follow up studies in his patients. Francis W. Glenn's article on the antibiotics and chemotherapeutic drugs and Harry C. Stein's discussion of preservation of foot function are excellent. These two articles are both highly informative and thought-provoking and will probably be read and reread with great interest by all who may

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HEMATOLOGY by Cy C. Starg M D Pr f flee 1 M d un
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- CARDIAC EMERGENCIES AND HEART FAILURE Prevention and Treatment by Aribbs M. Master M. D. Cardiologist Mount Sinai Hospital New York N. Y. As ociate Clinical Professor of Medicine College of Physicians and Surgeons Columbia University Marvin Moser M. D. Assistant Physician in Medicine (Cardiology) Grasslands Hospital New York N. Y. Adjunct Physician in Medicine (Cardiology) Grasslands Hospital Valhalla N. Y. and Harry L. Juffe M. D. Assistant Attending Physician Cardiology Mount Sinai Hospital New York Lecturer in Medicine College of Physicians and Surgeons Columbia University 2d edition 203 pages 14 illustrations Lea & Febiger Philadelphia Pa. 1955. Price 53 75
- PATHOLOGY by Peter A Herbut M D Professor of Pathology Jelferson Medical College and Director of Clinical Laboratories Jefferson Medical College Hospital Philadelphia Pa 1 227 pages 1 378 illustrations on 651 figures and 6 color plates Lea & Febiger Philadelphia Pa 1955 Price \$16.
- HPART DISEASE Its Diagnosis and Treatment by Emanuel Goldberger M D
 F A C P Associate Attending Physician Monteliore Hospital New
 York Cardiologist and Attending Physician Lincoln Hospital New
 York Consulung Cardiologist, St. Joseph's Hospital Yonkers Diplomate of the American Board of Internal Medicine Lecturer in Medicine Columbia University 2d edition 781 pages 298 illustrations on
 107 figures 5 tables Lea & Febiger Philadelphia Pa 1955 Price
 \$12.50
- 1955 MEDICAL PROGRESS A Review of Medical Advances During 1954 edited by Morris Fisbbein M D 346 pages The Blakiston Div McGraw-Hill Co Inc New York N Y., 1955 Price \$5
- CLUES IN THE DIAGNOSIS AND TREATMENT OF HEART DISEASE by Paul D White M. D Consultant in Medicine Massachusetts General Hospital Past Clinical Professor of Medicine Harvard University Boston Mass American Lecture Series Publication Number 242 A Monograph in The Bannerstone Division of American Lectures in Circulation Edited by Irvine H Page M D and A C. Co coran, M D Cleveland Clinic Cleveland Ohio 186 pages illustrated Charles C Thomas Publisher Springfield III 1955 Pitce 55 50
- MAN IN A COLD ENVIRONMENT Physiological and Pathological Effects of Exposure to Low Temperature by Allan C. Burton Ph D. Professor of Biophysics University of Western Ontario and Otto G. Edholm M. B. Head of Division of Human Physiology. National Institute for Medical Research Medical Research Council England (Formerly Professor of Physiology University of Western Ontario). Monographs of the Physiological Society Number 2 Editors L. F. Bayliss R. Feldberg A. L. Hodgkin, 273 pages illustrated Williams & Vilkins Co. Baltimore. Md. 1955. Price \$6.75
- IONOGRAPHY Electrophoresis in Stabilized Media by Hugb J McDonald D Sc Professor of Biochemistry Strich School of Medicine of Loyola University Chaqo III in collaboration with Robert J Lappe M S Research Assistant Department of Biochemistry Loyola University Eduard P 48 back Ph D Associate Chemist American Meat Institute Foundation and Research 4ssociate (Instructor) Department of Biochemistry University of Chicago Robert H Spitzer M S Research Assistant Department of Biochemistry Loyola University and Matthew G Urb n Ph D Associate Chemist Chemical Division Corn Products Refining Company Argo III 266 pages illustrated Year Book Publishers Inc Chicago III 1955 Price \$6.50

- THE CHEMISTRY OF MICRO-ORGANISMS by A thus B k n, B Sc Ph D
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WASHINGTON 1955

Monthly Message

Dr Willard C Rappleye, in an address at the congress on Medical Education and Licensure 1954 marrated the history of medical licensure Roger II of Sicily issued an edict in 1140 forbidding anyone to practice medicine who had not passed the necessary examinations. The Fourth Lateran Council in 1215 issued additional rules in regard to surgical procedures Freder ick II in 1224 extended the regulations promulgated by Roger II and even specified that the medical faculty of the University of Salerno should conduct the necessary professional lests The educational component of medical training was clearly stated by specifying that a candidate must have studied philosoph for three years medicine for five years and have practiced under a qualified physician for one year Please note that those educational standards were prescribed 700 years ago

Since then much offort has been expended in raising the qual ity of medicine in 1307 the King of France established a Board of Surgery in Paris to examine and certify those who wished to practice surgery Following this numerous Royal proclamations were issued dealing with surgery in England both the University and barber surgeons had their own Boards which were eventually merged under the great charter granted by Henry VIII This how ever was not altogether a happy marriage and for the next "900 years until the establishment of the Royal College of Surgoos in the 18th Century there were still many disputes among the Guilds

In our own country the past 50 years have seen the abolition of the diploma mills and the steady elevation of quality in med cine and surgery We must guard against overspecialization however and a return to the outmoded guild system toward which some of the Specialty Boards seem to lean In the words of San taxana Those who cannot remember the past are doomed to repeat it

FRANK B BERRY M D

A si in t Secretary of Def n c

(Health and Medical)

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A PSYCHIATRIC STUDY OF 55 EXPECTANT FATHERS

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ESPITE the fact that expectant fathers are tarely mentioned in the psychiatric literature, there is general awareness that fatherhood brings out the strengths and weaknesses in a man This fact has practical consequences which perhaps are not sufficiently recognized Because of its definite structure and demands, the military environment provides an unusual opportunity to observe the emotional reactions of young men as they begin to look on themselves as fathers

My attention was called to the special features in the problems of expectant fathers not only by the dramatic nature of some of their clinical problems but also by their responses on a projec tive psychologic test which was routinely used as a part of psy chiatric evaluation Faterson' had mentioned, several years before, that patients often gave valuable responses when asked to draw and then to describe an animal I used a modification of that technic as follows Patients were asked to draw an imaginary animal then, to write a story in which the animal was "doing something. They were encouraged to take a hint from a motion picture or their reading if nothing immediately came to mind On interpreting these drawings and stories it was found that expectant fathers, as compared with other men, showed a preponderance of fantasies relating to pregnancy and birth, sibling rivalry, and parental attitude Levy discussed the interrelations between drawings, stories daydreams, dreams, and their relationship to other clinical findings

DEFINITION OF TERMS AND METHOD OF STUDY

The criterion for inclusion of a case in this study was that, for a time the man had believed he was an expectant father It was certain that a pregnancy had existed in 51 instances, and some reason to believe so in the remaining four cases. The baby had

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been conceived in wedlock in 45 instances and out of wedlock in 10 Of the 55 men 31 were expectant fathers for the first time 10 for the second time inne for the third and five for the fourth (or more) time All but six men were maintaining a residence in the nearby area with their families. The study was conducted therefore in an essentially peacetime military setting.

The 55 men were divided into three separate groups which represented varying levels of success in the handling of their problems as expectant fathers. From routine clinical experience with 904 servicemen during a 21 month period 31 had been expectant fathers when their presenting problems began. Those 17 men whose problems were considered serious will be designated group A Group B was composed of the other 14 men whose problems were minor.

Group C was a normal control group of 94 expectant fathers none of them had sought or been referred for psychiatric consultation while they were expectant fathers. Tho e of men were part of a larger group of 240 enlisted men random samples of men from two squadrons who took part in a psychiatric screening study which had been presented to them as a study of the past and present difficulties encountered by normal enlisted men Several brief projective tests were administered to them they were asked to fill out a four page personality inventory form One of the items on that form was whether or not at that time the woman concerned was pregnant. Three months later having established the expected date of birth of the baby a review was made of all visits the 24 men had made to sick call while they were expectant fathers and an informal efficiency report was obtained on their duty performance during those months While the men in group C were not interviewed except for a few on whom necessary factual data were lacking data roughly com parable with groups A and B was obtained from them with a minimum of interference with their spontaneous behavior

VARIATIONS IN PERSONALITY FUNCTIONING FOR THE GROUPS

The three groups were roughly alike in chronologic age (for each group the median age was within one year of 24 years). The groups were also similar in ethnic background (46 were white there were four Negroes in group A two in group B three in group C). Ill were enlisted men except two commissioned officers in group B.

Differences in personality structure probably accounted for most of the differences in types of clinical problems these men experenced as expectant fathers Of the 17 mon in group A nine had a life history characterized by impulsive behavior disorder and

another five had definite schizoid personality tendencies. Of the 14 men in group B, none had a history of impulsive behavior dis order but five were schizoid. Of the 24 men in group C, three had chronic impulsive behavior disorders and one was schizoid. These personality evaluations were made on the total data on an individual case.

Indications of a lack of emotional readiness for fatherhood were clearly apparent from a few gross facts concerning the man smilltary and martal situation at the time he became an expectant father. The manner in which the men in the three groups set the stage for their approaching parenthood, including their timing of that event, and their conscious desire to become fathers, was probably the most crucial aspect of their subsequent emotional adaptation.

Thus as for unfavorable military situation, group A had a sig nificantly greater number of men in the four lowest enlisted ranks (15 as compared with four in group B and 11 in group C P = 02 or less) Also group A had a significantly greater number of men with previous records of misconduct (14 as compared with one in group B and two in group C P = 02 or less again when group A is compared with either of the other two groups) From the foregoing figures it was apparent that both groups B and C enjoy ed a favorable military situation. There was an interesting manner however in which group C differed from group B or group A Counting only those men in all of the groups who were serving in their first four year tour of duty group C had a greater number of men who were to become fathers within six months of the date on which they were to become eligible for discharge to civilian life (10 of 11 men) as compared with group B (none of three) or group A (one of 11—compared with either group P = 02 or less) Thus, group C contained a significant number of men who had allowed themselves more freedom for making future life plans. who had access to more pleasant fantasies and hopes in the im mediate future and who were bolstered up by the humorous com ments of their fellow servicemen.

Difficulties or disorginization, in mantal setting followed along similar lines. Unmarried fatherhood expectancy was more frequent in group A (seven as compared with none in group B and three in group C, this difference is significant by companson with group B P=02, but is not significant on companson with group C P=10). Two men in group A and two in group C were married before the expected date of birth. The expectation of an illegitumate off-pring posed an especially more complicated and disturbing event, and was neither consciously defended nor en

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joyed by these men Altogether 15 of the 17 men in group A were rejecting in attitude toward the expected baby usually openly stated Of the 14 men in group B 11 were rejecting in attitude but they were ambivalent and indirect rather than open in their statements. Data for group C were inadequate for this comparison. In general, the attitude toward the expected baby was closely related to attitude toward the expectant mother. As a furtler reflection of their marital setting it was noted that four of the wives of men in group A sought psychiatric consultation on menter of a man in group B and in no instance did a wife of a man in group C seek psychiatric consultation as an expectant mother. This also illustrated the fact that the problems encountered by these men were not mero passive reflections of problems encountered by their pregnant wives.

CLINICAL PROBLEMS

The men in group A suffered from problems which were serious within the military environment—acute exacerbations of impulsive behavior disorders were most cormon Loss often they showed severe neurotic or borderline psychotic symptoms or psychosomatic disorders. The men in group B suffered from problems which were minor in the military setting—transient or mild psychosomatic or neurotic symptoms which were often found in association with a subtle but well controlled change in behavior While none of the men in group C came for psychiatric consultation nine of the 24 had made several visits to sick call and the report of their effectiveness at duty revealed that their problems were similar in type and seventy to those of the men in group B another eight had the same type of complaints but of less seventy requiring fewer visits to sick call only seven had no significant clinical finding by these methods of study

A discernible trend in the clinical course of these problems in all groups was that the men seemed to experience their greatest difficulty during the first and the last few months of their vives pregnancies. A man's problems also were more intense and per sisted even after the baby was born in those instances where he had the greatest personality instability and external situational pressures.

The rore important clinical findings on all men in the three groups are summarized in table I It will be noted that anxiety and depressive reactions were common. Two men in group A who were moderately depressed attempted suicide in one in tance this followed the birth of an unwanted child and in the other after a suspected criminal abortion. In both instances agritated and psychopathic like behavior of several weeks duration proceded the attempted suicide and probably masked the severity of

depression Both of these men required psychiatric hospitalization, but made a gradual recovery and were returned to duty after a few weeks. In other instances, a mild depressive reaction was associated with accident proneness minor sprains, contusions or lacerations from automobile or other accidents.

TABLE 1 Clinical findings in 55 expectant fathers

	Group A (17 men)	Group B (14 men)	Group ((24 men)
Symptoms		 	
Anxiety irritability	15	9	111
Depression	8	و ا	4
Attempted suicide	2		
Accident proneness	2	2	3
Gastrointestinal tract symptoms	5	8	9
Headache dizziness	4	7	3
Hypochondri is	2	4	1
Passive defiance	1	1	
Lower efficiency	16	7	2
Heavy drinking	8	1	2
Transfer requests) 6	8	4
Overt defrance	1	1	İ
AWOI	6	1	1
Other offenses	3	1	
Insubordination	6	1	{

The frequent occurrence of psychosomatic symptoms in all three groups was the most important distinguishing feature in the psychiatric reactions of these men The men in groups B and C, much more clearly than in group A, developed complaints which were very similar to the complaints of pregnant women Several men developed gastrointestinal symptoms which were typical of "morning sickness" as soon as their wives became pregnant, less commonly a sudden increase in appetite similar to "eating for two" was seen Anorexia, nausea, and epigastic distress sug jostive of peptic ulcer were common one man, in group C, had reentgenographic evidence of ulcer Alternating constipation and diarrhoa headache, dizziness, or other body pains were other common findings Hypochondriacal complaints with fears of brain tumor or abdominal cancer, developed in several men who were well controlled paranoid personalities but, paranoid attitudes were poorly controlled in two such men in group A

Repeated visits to sick call were made by three men in group A, eight in group B, and six in group C three in group B were

hospitalized for diagnostic studies to rule out organic disease. The most senous psychosomatic disorder was suffered by a min group A who devoloped severe non pecific ulcerative colitis immediately after a forced marnage. After many months of conservative medical treatment and subjective improvement, objective signs of severe and chronic bowel changes remained and he was the only airman in the study medically discharged from service.

The evere passive aggressive or evert defiance which was so frequent in group A as noted in table 1 had the following consequences five were disciplined at least once three were court-martialed eight were separated from military service through administrative actions

The more subtle passive defiance and its practical consequences even in groups B and C was not immodiately apparent. However many men in group B had made sudden well rational ized official requests for transfer (six instances) or hardship discharge (two instances later withdrawn) Altogether six of the 14 men in group B had a change in station assignment at some time during their wives pregnancies although they were already maintaining residence with their wives. This suggested that expectant fathers are more on the move than other servicemen Fewer requests were made by the men in group C where it will be recalled many of those men were near the end of their tour of duty.

For all three groups a greater restlessness was also shown in their home life. Marital tension increased because many meieth home more often during evenings began to drink more devol oped new athletic interests or were believed to be having extra marital affairs. Thus the same tendency to be on the move which was expressed by impulsive behavior in group A may have been expressed in a more controlled form by the men in groups B and C.

PSYCHODYNAMICS

From the time a man believes that he may be an expectant father and notices changes in the expectant mother and in the fetus within her many conscious and unconscious problems are tirred up and must be handled at an accelerated pace. It was therefore notable that the men themselves were seldom aware that their recent problems had any relation to their approaching parenthood. Referring physicians showed little awareness that a patient was an expectant father. This is partly explained by the fact that in our culture there is a general silence concerning or pectant fatherhood. This is in marked contrast to many primitive socious where the behavior of the expectant father is strictly ritualized.

Some of the psychodynamic problems which expectant fathers face will be illustrated by several brief summaries of the clinical findings, and the drawings and stones about an imaginary animal as actually written by the men studied. My interpretive comments were based on the more complete clinical data for a given case Group C will be considered first because the issues became more complex in groups B and A.

PROBLEMS OF GROUP C

More often than in other groups the central figure in the story of men in group C was capable and strong the plot was involved and was elaborated with cleverness and humor. Even though there were frequent expressions of anger and of ambivalent attitudes their stories often ended on a happy or confident note. Several of the men who had no significant clinical problem write very little and their stories revealed rigid emotional control others wrote stories with a moral or in the style of children's tales.

Illustration 1 This man was an expectant father for the first time and had no significant problems. This story was obtained in the eighth month. The poor farmer was losing his farm because he couldn't pay his taxes and mortgage on the farm so as a last resort he decided to blow up his chicken coop and barns burn them down and collect the insurance after he blew up the chicken house he had a change of heart and tried to put the chicken he had destroyed back together when he started collecting the pieces all he could find was ten legs a breast an a head so he put them together and made his fortune selling his chickens to families with 10 children.

This story can be interpreted as revealing this man s fantasies and conscious thoughts concerning the financial responsibilities and worries and mixed erotions a father will experience. Will be resort to arson or violence or will he be called upon to do the impossible? If so will he succeed? At a deeper level this r an may have been expressing unconscious fantasies on how habe as ale made how they are born how dan gerous it is and how it is possible that the child may be deformed. His arbivalent attitudes are expressed by an unconscious anxiety that he will be impovertished after the new baby artives while at the same time he considers the possibility that he may become wealthy. He is concerned and confused as to whether he should injure the baby or take good care of it, and whether he should starve or feed the baby. Imamuch as his wife was in her eighth month when sexual innercourse is forbidden some of the feeling of tension and anger at this deprivation may be related to increasing sexual tension and rebellious temptations.

Illustration 2 This man was also an expectant father for the first time. For the first thee months he displayed anxiety sprained his left shoulder suffered from ancretia except for the evening real and desired to be transferred. This fantasy was obtained when his wife had

missed her first men trual p riod and he was uncertain of the pregnancy. He drew a square picture frame but did not draw an animal. He wrote as follows. Picture of an invisible melzocestafogabba. As you can undoubtedly see he i in swift persu t of a mate. You will also not ce that the rate to be is also invisible this is a very common char acteristic of the melzoce tafogabba family. Scient sis at the pre-ent tum admit they don't know very much about this animal (? I sts an animal) but at last reports. Dr. Nels in Cuttspuller a noted surhoutly on Wine. Wom o and melzoce tafogabba s reports that after a few more drinks he will give us the complet. I towdown

His story could be interpeted on sev ral levels a containing references to the missed menstrual per od the sperm meeting the ovum his anx ety while awaiting the obstetit cians report. He is ambivalent as to whether h with a baby is uncertain as to whether he is a boy at all and who ther the is only one or even two. There is also concern as to which family char citeristics tho baby will other t. He projects his own elf mage out the baby and co cludes that the baby will have desirable traits such as physical vigor and a strong heterosexual inclination. There is highly toward an authority figure but he is able to identify with the uthority figure as shown by the pompou writing tyl. He was making a sit sfactory emotional adaptat in with the h lp of d fense meck nism of somatizat in denial of hum?

Other men in this group whose difficulties were similar to men in group B wrote stones more closely resembling the men in group B

PROBLEMS OF GROUP B

Themes of masculine strength and bravery were rarely obtained from these aimen. There was little action or little elaboration of plot. Endings were avoided or were unhappy. The central figure of the story was often a fish or bird but there were many references to water classical symbolic references to pregnancy and birth and the stork Often the central figure was weak hungy homeless or unwanted. These men were projecting their own feelings of need and their own inhibited fear and anger onto the fetus. Their clinical symptoms revealed most clearly that they were struggling with fantasies that they themselves were pregnant, or that they themselves were the baby.

Illustr tio 3 This very capable plot was an expectant fathe for the first time During the first six months of his wife is pregnancy he became anxious rittable and depressed. He gained 50 pounds because of an uncontiollable appetite and was ashamed of his physical appliance. He was temporally uspended from flying tatu because of his ecess wight which had been a problem for siverally are life diveloped symptoms sugget we of pepticuler which required his pitalization but toening nographic tudies did not reveal an ulc. After siverall months of pythotherapy and a reduction diethelost the exc. six weight other

symptoms cleared and shortly after the baby s birth, he was returned to flying status

This fantasy story was obtained in the sixth month. This thing—there was no name for it to be sure—it all started early one morning while my friend and I were fishing. The lake was partly covered with a gray mist and a dead calm the water quite calm. There was a bite on my line and of course I thought it was one of the well known fish in this lake just begging to be pulled aboard. Believe it or not this picture that I drew for you the thing I pulled in—Haven t decided what to do with it. This is a symbolic version of the sexual intercourse the conception and the man's uncertainty as to whether he should keep the baby or throw it back—before the baby was actually born. His symptoms revealed his confusion as to whether he or his wife was pregnant and anxiety that he might be starved by the artival of the new baby. He was protecting himself from the frightening aspects of those specific fantasies.

Illustration 4 This man an expectant father for the second time complained of headache fear of brain timor and an itching sensation in the such rather the made repeated visits to sick call for consultations. He requested and obtained a transfer to another air base for a temporary duty assignment at about the time the baby was expected to be born

This fantasy was obtained in the ninth month. There was a little fish named Oscar who had legs. When ever he saw other fish about to be caught on a hook he would either run or swim very fast to warn them. All the other little fish were jealous of him. One day he wanted to explore so he swam up to the shore and walked right out on the bank and a cat caught the poor little fish and that was the last ever heard of little Oscar the walking fish. The projection of some of his fear as well as some of his own admirable qualities onto the baby is clear. He identifies with the baby and shates the baby is supposed fears of being engulfed and injured and eaten up. His identification with his pregnant wife was best shown by his symptoms. On a more superficial level of interpretation he was under increased tension on account of sexual frustration. This man was able to verbalize his fears of the consequences of sexual abstinence and was troubled by sexual dreams and noctumal emissions.

PROBLEMS OF GROUP A

The overtly defiant behavior of many men in this group may have represented an unconscious attempt to convince themselves of their masculine strength and braver. Their fantasy stories however, usually showed an unconscious feeling of weakness or "bidness" and these were the feelings which were projected onto the expected baby. Often their fantasy output was meager, but, more often than in the other groups, their unconscious problems were directly expressed by their impulsive behavior Intense prob-

lems of unconscious sibling rivalry were observed similar to those found in very young children

One man in the third month of his wife s pregnancy became encuretic for several weeks and extremely insubordinate after his application for discharge because of hardship was not approved Another man toward the end of his wife s pregnancy de veloped expensive interests in new hobbies which left no money for necessary household expenses. He bought model planes trains started a coin collection and purchased a violin and began to take lessons. Not only did these actions indicate his sibling rivalry but on a deeper unconscious level they may have represented a desire to influence the baby in a favorable way by en gaging in cultural pursuits and a desire to provide playthings. Their ambuyalence was more extreme as wem their actions.

Illustration 5 This man in expictant filter for the first time was por head of or voyeurism. His complained of rice to sexual preoccupation to naid bases in manufaction His drew picture of a cowing diameter a ginability to write a story. In agreed to dictate one a follows will it go for soon body to multi her. There one thing missing—the baby cow. The cowing naid the ability of the milked represented his own feeling of sual tension and the abient calif represented his own feeling of sual tension and the abient calif represented his own feeling of sual tension and the abient calif represented his own feeling of sual tension and the abient calif represented his own feeling of sual tension and the abient calif represented his own feeling of the manufaction of the feeling of the

Illustration 6 This umma ted expect at f ther was an acomm sion d officer with six y ars of excellent milit ry service. His sudd nly bigan to borr whe vily from his fids telling them this first had lukem a and he wild helps go make her last few days of liftenjoy ble Later he dmitted several attempts to commit burglary which he could not bring him elf to complete. He was anxious deprised and utritible Following an argument with the gift friend he attempted to commit suiced by termining a closed gage. The pregnancy was prob bly terminated by abort on

This fant y w s obtained a few days following his attempted suicide

I hid behind a ock and filed a hot into the cave but nothing his
pened I was getting ready to shoot ag in when this a imal came out I
was so shocked that I could not move
traight at me I fulled the trigger but nothing happined I picked
up my gun tworked I have been in the same are many times suice
then but have neve seen the anim I again. The ite is amb valence
a dithed iffu is tilly diected tward the girl the baby and him elf
and its peding ny lyement of the mility a dicivil an environment
were evident I the instance and in the ther timepted suicid there
was a similar pitte of events following an argument a din impeding
separation both min tied to commit ucide by gas. This suggested not
only a coniction this they wild be completely aband in dia left to

die after the new baby arrived but also that they may have felt that they were helplessly immobilized and suffocated within the maternal body

Illustration 7 This expectant father was told by his gifl friend that she was pregnant and that a physician had verified it. They were married a few weeks later. The first symptoms of ulcerative colitis were experienced a few days before the marriage. The couple separated a few weeks later when the man discovered the woman was not pregnant. The ulcerative colitis increased in severity. He was hospitalized and treated conservatively with gradual subjective improvement over a 10-month period. Lengthy expensive and bitter lawsuits were begun by his family and his wife s family Although both parties said that they wanted a divorce they obstructed the efforts of their lawyers by continuing to write and telephone each other at times expressing love and at other times hate.

This fantasy story was written by him six months after he learned his wife was not pregnant. This animal was born on another planet. He got to earth by accident. The only thing to eat on the planet was rock and he needed those big teeth to chop this up. The growth under the head was a pouch to store some of this strange food. He never turns around and walks back but constantly moves in one direction. The pregnancy fartasies still persisted. As shown by his symptoms and his story he was still angry and protective of a fantasied fetus within his own body, and was projecting onto it his own physical damage and deprivation.

DISCUSSION

Among the few available reports in the literature are Benedek s' discussion of the psychodynamics of fatherhood which is particularly focused on the problems of men in military service and men who are about to become veterans. Reider s' discussion of the unmarried father is also valuable. Both writers stressed the fact that fatherhood brings out the individual's oedipal situlation very clearly. Benedek s viewpoint may be paraphrased that as a man attempts to develop an unconscious image of himself as a good father he is aided by his past and present life experiences with "good father mother and sibling figures. It can be seen that the effects of those inner unconscious images are apparent in various life situations but they become especially evident as soon as a man becomes an expectant father.

These observations indicated that more of the men in group C possessed or achieved a rather stable and complete inner image of themselves as capable and loving fathers while they often showed indications of concurrent identifications with the pregnant wife and with the expected baby, those identifications were either transient or did not lead to symptoms which could not be handled at sick call Indeed it would seem that normally the expectant

father identifies with his wife and baby. This may actually help him to become more responsive to their needs for love and care

The men in group B had less stable and complete images of themselves as capable fathers When as was the usual case they made a quick response to brief psychotherapy they continued to show evidence of an unconscious image of themselves as a "good mother or as a good older child in the family They felt uncom fortable in the role of a good father. The men in group A had no stable or complete or good images of themselves as fathers mothers siblings or babies. These interpretations in all three groups were consistent with their total life histories and not merelly with their response to the pressures of parentrood

Frank discussed the issues underlying other aspects of these observations in his article on the exual fantasies of young chil dren He noted a senes of interminated fantasies which children resolve sometimes hopefully and at other times in a manner which frightens them What would it be like to have to produce a baby within one sown body? What would it be like to be the developing fetus? What would it be like to be replaced by the newcomer? How and under what conditions do these things happen? In attempts to find an answer the child may draw on familiar expen ences such as eating unnating and defecating This study showed many manifestations of those specific fantasies ex pressed by symptoms belavior or in the drawings and stories The extent to which these unconscious fantasies from childhood were revived the degree of regressiveness and their persistence were determined by the emotional integration of the individual and the extent to which he was experiencing external pressures

There is a need for further psychiatric research to determine the impact of these problems on the men and on the military on vironment. It would be inportant to establish the frequency of self inflicted or secidental injury among expectant fathers who handle aircraft motor vehicles or heavy machinery. It would be of value to know how frequently these men request transfer or discharge or show a sudden reduction in efficiency or lose control of their behavior.

Medical officers at sick call flight surgeons and all other physicians should be alerted to the importance of inquiring whether or not a male patient is an expectant father It will often devel op that problems such as a sudden anxiety irritability or depressive reaction or certain psychosomatic symptoms are related to fatherhood expectancy. The man's attention can then be focused on the real problem inasmuch as he will not be effectively reas sured even though he is successful in obtaining a transfer or reas signment or by being allowed to act out in other ways. If the man feels free to do so he will ask the physician for frank and

factual information concerning the effects of sexual abstinence, masturbation, the development of the fetus, the effects of preg nancy on the wife, prenatal and postnatal care of the wife and baby, realistic problems concerning finance and housing, and changes in sleeping arrangements and recreational activities Realistic discussions will permit the patient to speak more in telligently with his wife, and share more knowingly and effectively in their experience. He may also exchange information with friencs who have successfully solved these problems Even the skilled psychiatrist will avoid the interpretation of deep unconscious fantasies during brief psychotherapy, and will interpret the indi cations of latent heterosexuality rather than latent homosexuality, and latent maturity rather than latent infantility. Only the more difficult cases will require psychiatric referral because a physi cian needs no psychiatric training to discuss these very human problems and anticipations which surround the expectation of a new baby

SUMMARY

A study of 55 expectant fathers in three groups revealed that parenthood expectancy is frequently overlooked as a source of acute emotional stress

Group A, made up of 17 men most of whom had a previous life history of impulsive behavior or schizoid personality, presented psychiatric problems which were senous within the military setting Seven men were expecting to become fathers of illegitimate offspring Fifteen were openly rejecting in attitude toward the expected baby Their outstanding clinical problems were depressive reactions with attempted suicide (two instances), ulcerative colitis (one instance), and severe passive aggressive or everly dofiant behavior leading to administrative separation from service (eight instances)

The 14 men in group B, well controlled in behavior and adjusted to military life presented minor problems. Eleven were ambivalent or openly rejecting in attitude toward the expected baby and toward their wives. Their clinical problems consisted of transient or mild psychoneurotic or psychosomatic disorders which responded to brief and realistically onented psychotherapy. About half of these men had shown a slight reduction in duty efficiency or had made recent requests for transfer.

Group C was made up of 24 men who had not been referred for psychiatric consultation while they were expectant fathers. They were studied by means of group psychologic tests, a review of visits they had made to sick call, and an informal efficiency report for the months they were expectant fathers. About one third were found to have no significant clinical problems, another third

study eventually are proved to have the suspected pathologic con ditton Mason however compiled an excellent sories of results of 400 263 examinations with 35 mm film at the U S Naval Training Station Great Lakes Ill Ordinarily long term follow up of suspected cases is difficult because often months of hospital ization and clinical laboratory and histologic study are required before a definite diagnosis is obtained

Therefore an exhaustive follow up study of those personnel discovered to have suspicious findings on their photofluorograms during a four month period was undertaken in order to assess the contribution of mass photofluorographic surveys to the total number of cases of tuberculous diagnosed among naval and Manne Corps military personnel by all methods It was anticipated that a statistically significant percentage of proved cases of tuberculous could be obtained in order to predict the total yearly yield of the mass chest x ray program In addition the clinically important nontuberculous conditions incidentally discovered could also be classified and evaluated

All photofluorograms taken by naval photofluorographic units were received and reviewed at the Bureau of Medicine and Surgery From 1 June 1953 through 30 September 1953 348 8.5 photofluorograms of naval and Marine Corps personnel were received and reviewed Of these the photofluorograms of 8 851 persons were considered to show suspicious indiags and these persons were re examined by 14 by 17 inch film Re-examinations of 773 of these confirmed the suspicious photofluorographic findings and these persons were referred for further clinical study

At the end of the calendar year 1953 an attempt was made to detemmen the final established diagnoses of these 773 persons however only 659 of the 773 referred persons could be identified for follow up For thoroughness the hospital reports received in the Bureau were searched on three separate occasions as recently as April 1955 in order to recover the most meent available information in all instances a diagnosis had been established and the patient invalided from service retained for treatment, or returned to duty

Of the 659 patients identified (table 1) 284 (43 1 percent) were apparently not admitted to a hospital and 86 (13 1 percent) were admitted but had unrelated pathologic conditions. This left 289 (43 9 percent) persons with 293 established diagnoses compatible with the original suspicious findings on photofluorographic examination. Thus 0 08 percent of the 348 875 photofluorographic examinations revealed proved pathologic conditions of the chest.

Of these 989 persons 78 (27 0 percent) were tuberculous of these 63 had active pulmonary tuberculosis. Thus persons with

Gr p	Gr p N mb r and typ n mber of finding	Prectof grp1	Percent of group 2	f Percent of Preent of Preent of group 2 group 4	P reent of grop 4	P rcent of group 5	Percent of gr p 6
-	348 873 pera (ex min d by ph toflu rogs m)	100 00					
7	8 831 prons (rew mined by 14 by 17 inch roentgenogram)	2 54	100 00				
£	773 pers s (ref rr df r furth r study)	0 22	8 73	100 00			
•	659 persons (f Howed)	010	7 45	85 25	100 00		
~	289 perso s (with 293 pro d pathologic chest conditin)	80 0	3 27	37 39	43.85	100 00	
v	78 pers (with confirm d p im ary tuberculosis)	0 022	0 88	10 00	1184	26 99	100 00
^	63 persons (with c nitmed ctive tub reulosi)	0 018	0 71	8 15	9 26	21 80	80 77
60	71 pathologic c ditions (que ti nably t berculous)	0 0 0 0	080	9 18	10 77	24 57	
6	144 pathologic condition (nontubercul u)	0 04	1 63	18 63	21 85	49 83	

active tuberculosis represented 9 6 percent of the 659 patients who had been referred for further clinical study (or 0.71 percent of the 8.851 showing suspicious photofluorographic findings or 0.18 percent of the total number of persons examined)

TABLE 2 C of at plm arythrcld godld Mn Crpp onneldung ld y 1953

Typ f t plm ry tub 1 s	N mb
P m ry	4
D muntdb matg	2
M am 1	140
Mod ly d d	192
F =adva d	67
T t l	405

Source Md 1 Start Ds B f Mdin d Surg y W h gton D C

Accordingly we may estimate that every 5 538 photofluorographic examinations will reveal one case of active pulmonary tuberculosis as based on these observations. Applying this ratio to the total number of naval and Marine Corps personnel examined during the calendar year 1953, z e 1 457 373 it could be expected that about 263 cases of active pulmonary tuberculosis would be discovered by routine photofluorographic examinations Because 405 persons were diagnosed in 1953 as having active pulmonary tuberculosis (table 2) the photoffuorographic program was probably responsible for at least 65 percent of the finds

Besides the 78 persons actually diagnosed as being tubercu lous, another 71 had questionably tuberculous lesions such as pulmonary infiltrations pulmonary fibroses and pulmonary granu lomas (table 3) In fact 15 had conditions so controversial that they were invalided from the service.

The 144 established diagnoses in the remaining persons were not of tuberculous lesions and ranged from pneumonias to neo plasms and cardiovascular defects to musculoskeletal deform items (table 3)

It is apparent that the diagnostic potentialities of photofluorog raphy are not limited to the detection of tuberculosis Aside from the acute nonspecific inflammatory diseases in which admittedly routino screening contributes little to the diagnosis or prognosis heart disease congenital and acquired and neoplasms lend them selves well to ministure full detection.

TABLE 3 293 rathologi o diti diagn .ed 1 2 9 pe ns o f llow p

TABLE 3 293 pathologi	o diti u	iagn seur z a pe insu i now p	
	I TUBERCI	JLOSIS (78)	
Ati		Arrested	
Minimal pulmonary	31	Minimal pulmonary	12
Moderately advanced pulmonary	24	Mod rately advanced pulmonary	2
	7	Trach b onchial lymph nod s	ī
Far advanced pulm na y	,	Tracii b offcinal lymph fibe s	15
Pulm ary postopera			10
ti e gm ntal rewe tion	1		
	63		
IL QUE	STIONABLY	TUBERCULOU (71)	
Infiltrati n, pulmonary cause		Calcificati pulmonary cause	
und te mined	49	undetermined	10
	-20	Granuloma lung type unkn wn	
Fib osis pulmonary cause	10	(both sected)	2
und termined	10	(Bodi Sected)	71
	TUBERCULO	US CONDITIONS (144)	
Pulm nary		M sculo k letal	
C Idioid my osis	3	Eve tratt of diaphragm	1
Hi toplasm i	2	E ntr ti congenital	
Sarc idesi	13	di phragmatic d f t	1
Carinm ec fbronhs	1	Arthritis heumatoid	1
T ra.oma maliquant, m tastati	-	O teomy litis chronic fi trib	1
from testicl	1	Fr tur of clavi I with no uni n	ī
	4	Sc lio i ong nital	ī
Cyst pulm nary Asthm perennial	4	D fo mity f ib probably	-
	7	cho dr m	1
Bronchiti cu	í	Spina bifida	ŝ
Pn umoni 1 b r	24	H mivertebra	i
Pn um ni p imary typical	3	Pectus cavatum co q ni.al	•
B onchopneum nia		d fet	1
Prum ni n e	5		2
B on hitis chr ni	5	Compressi f tur of v teb	- <u>2</u>
Pi ural adhesio pn um nia	1		14
Fib i apical pi ural	1	Cardiova cula	
Plurisy chr ni o tube ulo s	3	Producedist and	2
Pneumotho ax, spontane us	4	Pericardial yst	
Bochi tas s	14	Tum pericardial	1
Atelecta_1	1	Rh umatic valvuliti (ina tive)	1
Emphy ma, bull us	1	De t ocardia with uricular	_
Cysti dileas o nilal	1	11b illati n	1
Pn m thorax, tra made	1	Hypertensi va cular dileas	
	100	benign	2
R ticulos doth lial		Hype te i vascular di as	
Podyk deae	3	Ane ry m faorta	1
Leuk mia, lymphoge ou	ĭ	S ptald f t, ventricular	i
Lymphade opathy	5	H art disease cong nital n. c	2
Lymphad ni i chroni	3	Coar tati fanta	1
mediast.nal	2		13
Case nec i of m dastanal	-		13
lymph od	1	Misc Haneo s	
Lymphad opalhy generalized	i	Ganglio euroma, m iastinal	1
esturbing abunta Augustinen			

Other investigators have substantiated this conclusion For example Schwartz and Berman' showed that successive photofluorograms of 10 549 persons revealed abnormal cardiac silhou ettes in 207 and that about 80 percent of these 207 were proved to have definite organic heart disease Gowen and Frank' found 74 cases of cardiac disease among 43 202 persons, and 14 proved cases of chest malignancy among 156 724 persons examined by

If t ise here las fied

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70 mm film According to Ochsner and associates who said that roentgenography yielded suggestive evidence of lung cancer in 82 percent of their patients routine screening offers the only method for early detection of pulmonary neoplasms

That the general civilian population should yield higher rates of neoplastic and cardiac diseases than does a group of young male adults is to be expected. However, in spite of the fact that our study deals largely with the latter group a significant number of nontuberculous conditions were detected in apparently asymp tomatic persons at a time when corrective measures might be successfully instituted The economic importance of these non tuberculous conditions would be impossible to determine accu rately and must be left to the imagination. Although lacking the contagiousness of tuberculosis neoplastic and cardiac diseases can be as debilitating and financially disabling as the former Thus the worth of the mass photofluorographic chest screening program should be evaluated in terms of the method's success in detecting not only tuberculosis but the economically important nontuberculous conditions as well

SIMMARY

During a four month period 348 875 U.S. Navy and Marine Corps personnel on active duty and retired status were examined by photofluorographic films Of these 8 851 were re-examined using 14- by 17 inch roentgenograms because of suspicious photofluorographic findings Of these 778 were referred for further study Ultimately 289 were proved to have significant chest con ditions

Sixty three cases of active pulmonary tuberculosis were dis covered by routine photofluorogram an incidence of 18 per 100 000 examinations This method is estimated to have accounted for about 65 percent of all diagnoses of active pulmonary tubercu losis in the U S Navy during 1953 Mass screening also con tributes to the detection of nontuberculous conditions particu larly neoplastic and heart diseases

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THE CERVICAL SMEAR FOR CARCINOMA

I believe that smears obtained directly from the cervix are superior to those prepared from the pool of secretion in the posterior vaginal formix at least in detecting carcinoma of the cervix. This presupposes a speculum examination of the cervix which should be a part of every pelvic examination anyway. The mucousplug sometimes present in the endocervical canal is usually poor hunting ground and should be discarded. The smear can be made by aspirating the endocervical secretion with a blunt piper or preferably by gently scraping the squamous columnar junction with a wooden or metal spatula or with an Ayre wood en scraper. The material is then smeared out over one entire side of a microslide and dropped while still wet in a fixing solution consisting of equal parts of ordinary anesthetic ether and 95 percent ethyl alcohol. The smear should be rather thick and should be spread out as uniformly as possible.

It is convenient to have available in the examining room at all times screw too koplin jars containing the ether alcohol fixative and microslides properly numbered with a diamond point pencil (These jars will hold five slides or 10 if they are placed back to back) Just before making the smear the nurse or assistant removes a slide from the fixative wipes it dry and drops it back into the fixative immediately after the smear is made In my experience the fixative can be used almost indefinitely but it must be filtered from time to time

Fixation should be catried out for at least two hours and the smears can remain in the fixative for long periods without deterioration of the cells. After proper fixation the smears are removed stained and examined If necessary they can be removed from the fixative dried and mailed to the cytologic laboratory with no cell deterioration to speak of Pertinent clinical information particularly the name and age of the patient and clinical appearance of the cervix should be submitted with the specimen

-I L TILDEN
in Postg aduate Med cine
PP 553-554 Dec 1954

THE DIFFERENTIAL DIAGNOSIS OF PAPILLEDEMA

Its Importance in Military Medicine

SAMUEL D M PHERSON J Leutena t C mmand (MC) USNR STEPHEN I RYAN C bt (MC) USN

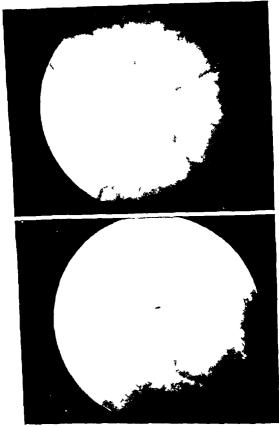
THE CORRECT recognition of papilledems or choked disk when it occurs in military personnel is important not only for the early recognition and treatment of the underlying cause but also for obviating the needless return of personnel from distant stations to continental medical centers with dis orders which may simulate papilledems but may be of little or on neurologic significance. If the diagnosis of early papilledems is as difficult for the trained ophthalmologist as has been suggested by the extensive literature on the subject one can easily understand the difficulties encountered by the general medical officer at distant stations with no special equipment for evaluating blurred disks

Shortly after von Helmholtz invention of the ophthalmoscope in 1851 papilledema was first described by von Graefe and subsequently recognized as the cardinal sign of increased intra cranial pressure Since that time it has been accepted as perhaps the most important single diagnostic sign of brain tumor For this reason if for no other the presence of blurred disks has frequently resulted in the hospitalization of personnel with consequent loss of service although no pathologic disorder of the eye or central nervous system was present

CLINICAL APPEARANCE

The appearance of the disk with papilledema will vary with the degree and duration of edoma. As a rule, the disorder is hilatoral although in its incipiency, the process may involve one eye more noticeably than the other. The earliest signs of papilledema are thought to be swelling of the nerve fiber layer of the disk particularly at the superior and masal sides of the disk and slight forward protrusion of the central vessels at their point of entry into the nerve head. Walsh believed that venous distention and tortuosity immediately around the disk

FmUSN IH ptal Btb da Md.



lig e l Appea ance of the funds in a patient with papilledema and frontal lobe i mor showing obliteration of the physiologic cups blurring of the disk outless and bemorrhage over the light disk at 7 o clock.

DIFFERENTIAL DIAGNOSIS

Papilledema mu t be distinguished from everal disorders of the optic nerve which at times may simulate the appearance of choked disk. These are pseudopapilledema optic neuritis drusen of the optic nerve juxtapapillary choroiditis and medul lated nerve fibers (table 1)

TABLE 1 Dist gut b g f ture of art us blurred d ks

D d	V on	F ld	Invol me t	N urol g
Pplldm	Good until I te	E larged blind p ts	Bilateral	U mally pre n
Ps do- pap lled ma	Good	N rmal	Bulteral	Noe
Optic urti	Por	C tral	U lly n la ral	Myb prset
Drus	Good until	N sal df t	Blatral	None
Juxtsp p- illay bo- di	U ually good but my b ff ted	S ct d f ts	U il teral	N ne
M dull ed	Good	Bland p ceree p d	U wally blat ral	N oe

PSEUDOPAPILI EDEMA

Pseudopapilledoma is a congenital disorder usually occurring bilaterally in persons who frequently have moderate to marked hyperopic errors of refraction. With such a refractive error the nerve heads may appear small on ophthalmoscopic examination. The disk outlines are blurred and the physiologic cups are small or absent. As a rule there is no hyperemia of the disk and venous dilatation is absent. There may be some congenital tortuosity of the rotinal vessels but this when present involves the arteries as well as the veins. Fudates and hemorrhages are absent and there is no edema of the surrounding retina. With correction of the refractive error vision is normal. The blind spots are of normal size and the perspheral fields of vision full.

DRUSEN (HYALINE BODIES) OF THE OPTIC NERVE

Drusen (hyaline bodies) are small spherical refractile bodies occurring either on the surface of the optic nerve or in its substance and variously considered to be due to degenerative changes in old hemorrhages or exudates or to degeneration of excess neurogical tissue — Hyaline bodies usually occur as a bilateral

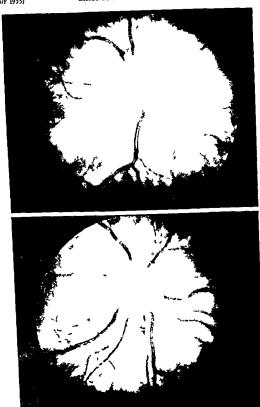
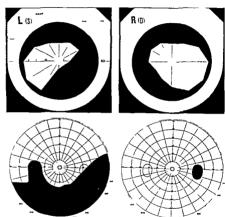


Fig. c. 4. Appea ance of the fund in a patent u th dusen of the optic me ve leads. I both eyes the dusen could be seen as sphe ical masses at the n urrett all magis. The appea ance of the light disk closely simulates that of papilledema.

finding and when they lie superficially on the optic nerve resemble a grapelike cluster of small spherical bodies overlyin the disk When these bodies lie deeply within the substancof the nerve the nerve head may appear elevated and edematous Frequently in these instances one or more of the drusen mabe seen lying at the neuroretinal margin (fig. 4) At times the are best seen in indirect illumination by throwing the circl



Fgur 5 C tal nd pe pher l field f the patse t fgur 4 The gb f ld how l ght l g me t f the blad sp t The left how a ma a def t ind g f m the blad p t t th m a lep phery

of light from the ophthalmoscope across one half of the nerve head and then looking at the opposite half in fundi with drusen of the optic nerve there is frequently some degree of pallor of the nerve head and an absence of venous dilatation and tortu osity—findings which are useful in distinguishing this disorder from papilledema

Good central vision is usually present in persons with druser although after some years central vision may decrease due to

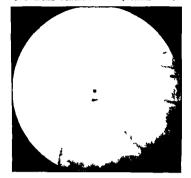
an accompanying optic atrophy Rucker's and Chambers and Walsh' have described characteristic field defects, such as nasal steps, enlargement of the blind spots, arcuate scotomas, extending from the blind spot to the periphery, small paracentral and central scotomas, and concentric constriction of the fields of vision (fig 5), which may occur in persons with primary drusen of the optic nerve with no other neurologic finding Most of these changes are the changes which may occur in patients with chronic glaucoma

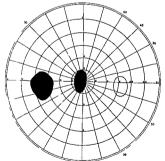
Drusen of the optic nerve are sometimes present in persons with Bourneville's syndrome or tuberous sclerosis, a disorder characterized by drusen of the optic nerves, adenoma sebaceum, cerebral sclerosis, and retinal tumors "In addition, persons with primary drusen of the optic nerves may develop bizarre sen sory symptoms even in the absence of any positive neurologic finding." For these reasons it is important that drusen of the optic nerve be correctly recognized and distinguished from papilledema

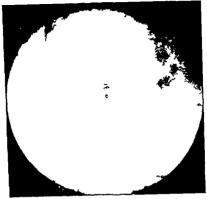
OPTIC NEURITIS

Optic neuritis as used here is synonymous with papillitis, i e, the ophthalmoscopic appearance of the herve head, and is limited to the intraocular portion of the optic herve. The appearance of the optic disk depends on the duration, the caus ative irritant, and severity of the response i 14 13

Optic neuritis usually occurs as a unilateral disorder in contrast to papilledema In most cases which are seen early, be cause of the patient's subjective complaint of loss of vision, the disk appears red and hyperemic and at times may be difficult to distinguish from the surrounding red retina The margins at first may be only slightly indistinct and the physiologic cup reduced in size and with no measurable elevation of the surface of the disk Within a very short time the disk appears grossly blurred and the cup is lost. Usually the elevation is not marked. not over two diopters The veins appear full, distended, and may be tortuous The arteries are normal Exudates on and about the disk may be associated with small, flame shaped, or round hemorrhages. There is usually a ring of peripapillary edema As time goes on, the disk becomes less red and with increase in evudate assumes a blurred grayish appearance (fig 6) Hemor rhages outside the nerve head and peripapillary zone are un common On the other hand, exudates may extend out to and include the macular area giving a typical star figure or partial one If the process develops to this degree, the condition is spoken of as a neuroretinitis Frequently where the reaction







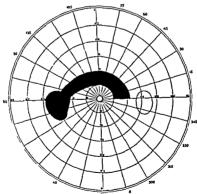


Figure 7 Fundus and central field of a patient with fucta papillary choroldits about g edema of the temporal half of the nerve bead and adjacent ret na with a sector defect in the cent al field of tisson.

is marked fine opacities in the vitreous can be seen with the onhthalmoscone

Ordinarily it would be difficult to distinguish between papille dema and optic neuritis on the ophthalmoscopic picture alone If the condition is unilateral and remains so, the diagnosis of papillitis is likely

As referred to previously the main point in differentiating this condition from papilledema is the loss of central vision which is out of proportion to the appearance of the fundus Typically there is a central scotoma because the highly spe cialized papillomacular fibers are more sensitive to insult (fig 6)

It must be remembered that optic neuritis is part of a disease process not only of the central nervous system but of many systemic diseases namely acute and chronic infections meta holic disorders poisonings anemias et cetera

Although in many cases of optic neuritis no cause can be demonstrated at the time the most common cause is multiple sclerosis. It is well known that other associated signs of the disease may not appear for many years

IUXTAPAPILLARY CHOROIDITIS

Juxtapapillary choroiditis or Jensen's retinochoroiditis is a choroiditis occurring adjacent to the optic disk Its appear ance again depends on the stage at which it is observed. The disorder is usually a unilateral one

Early it appears as a yellowish or dirty white fluffy lesion with indistinct margins and surfaces. There are usually dustlike floating vitreous opacities When the papilla is involved in the process it becomes indistinct and its appearance may closely resemble papilledema (fig 7) The retinal vessels are frequently obscured in the exudate and edema though more marked than that occurring in papilledema is limited to the side of the lesion

Vision usually remains good unless vitreous opacities become pronounced or unless the macular fibers become involved in the choroiditis. The fields characteristically show a sector defect with the apex at the blind spot extending into the periphery or to the median raphe (fig 7) With healing as in choroiditis gen erally the area becomes white with varying amounts of pigment deposition and is circumscribed with irregular margins. The vitreous clears but the sector field defect persists

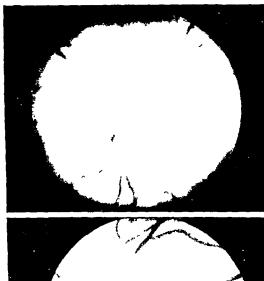




Figure 8. Appearance of the fund in a patient with medullated notice f bers showing the white stituted masses overlys g both the nerve beads and adjacent vessels.

MEDULLATED NERVE FIRERS

Normally in man the optic nerve fibers lose their myelin sheaths as they traverse the lamina cribrosa However not uncommonly they are seen ophthalmoscopically adjacent to the disk as white striated irregular areas with fimbriated or feath ery margins of various sizes and shapes (fig. 8) The retinal vessels are usually covered over by these opaque areas but if the area is small and less dense it will appear vellow 16

Vision is routinely good in persons with medullated nerve fibers and the peripheral field is normal, but the blind spot is enlarged and corresponds to the area of opaque fibers overlying the deep or retinal elements

SUMMARY

The early recognition of papilledema is obviously of great importance but is often difficult because of a number of dis orders of the optic nerve which it may closely simulate Among these are pseudopapilledema optic neuritis drusen juxtapan illary choroiditis and medullated nerve fibers. The salient features of each of these have been described to aid in evaluating blurred disks

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OSLER FOUND THE TIME

Many physicians are so engrossed with the practice of medicine that they are convinced mistakenly that there is no leisure time for reading And yet physicians can find time to read if they will only imitate the successful reading habit developed by William Osler one of the greatest of modern physicians. Osler's biographers attribute his usual accomplishments not only to a profound knowledge of medicine but also to a broad general education. Osler was intensely interested in the thoughts and performances of human beings. He realized that the sole method available to him for obtaining an inexhaustible fund of information about these matters was to read what others had written. Osler's problem was insufficient time for reading the complaint uttered by so many of his fellow physicians this was especially acute in his own case since Osler was an extremely busy physician in much demand as a teacher a prolific writer a versatile spealer and an intrepid research investi gator Osler was able to arrive at a satisfactory solution early in his career. It became a habit of his to read the last 15 minutes before re tiring and this habit he pursued during a long lifetime. One story has it that Osler was unable to fall asleep without engaging in the custom ary 15 minutes of bedume reading During his life. Osler read a signif reant number of books enough to furnish a well stocked library. Nor was his reading limited to medicine he developed an avocational specicialty to balance his vocational specialization gaining fame as an authority on Sir Thomas Browne the 17th century master of Figlish prose Fven though Osler was for many years engrossed with medical research the reform of medical teaching and the introduction of modern clinical methods he was able to supply an effective answer to the question busy physicians often ask themselves. When will I find time to read?

> -from the Journal of the Am rican Medical Association p 81 Jan 1 1955

CLINICAL USE OF THE DEPOLYMERASES OF STREPTODORNASE

JOSEPH M MILLER M D
MILTON GINSBERG M D
JOHN A SURMONTE M D
FRANK B ABLONDI A B
JOHN H MOWAT Pb D

S TREPTODORNASE discovered during the investigation of streptokinase has been proved to be a valuable therapeutic agent in the treatment of infected wounds Streptodornase requires catalytic activation by the magnesium or manganese ion,

Straptodornase reduces the viscosity of pus which is thick from the presence of desexyribonucleoprotein. Desexyribonucleoprotein and desexyribonucleic acid constitute from 30 to 70 per cent of the sediment in viscous purulent evudates. Johnson by studying the changes produced by vandase (brand of streptokinase streptodornase) using the Feulgen method of staining has shown that a large part of chronic inflarmatory exudate is composed of dying and dead cells. A marked decrease in the number of such forms however follows the use of varidase. Collections of clumped leukocytes are broken up. The clumping of the leukocytes is apparently due to the presence of desexyribonucleoprotein which is depolymentized by streptodornase. An increase in the number of effective leukocytes thus results.

The nucleoproteins are compound proteins containing nucleic acids as a prosthetic group Desoxynbonucleic acid upon hydrol ysis by the group of enzymes contained in varidase yields phos phone acid desoxynbose purines and pyrimidines a result almost similar to that achieved by acid hydrolysis Varidase would appear to contain a series of progressively acting closely related and highly specific enzymes. The first enzyme apparently acting on this highly polymenc molecule is a depolymense which causes a great change in viscosity. This action resembles that of the crystalline desoxynbonuclease derived from the pancreas as descriled by Kuntz. At this stage however the vandase mixture of enzymes in contrast to pancreatic domase contains one which acts upon the end products of the depolymenzing enzyme. The second group of end products in turn is acted upon by

FmV Adm HplFHwad Md, dbLdlLabora Don Am Cynamd CmpyPlRiNY

a third enzyme to give a third mixture of end products, until a complete digestion is attained

With the availability of an experimental lot of the depolymer ases of streptodomase, free of streptokinase, it became of interest to compare its clinical efficiency with varidase, which contains streptokinase, streptodomase, nucleotidases, and nucleosidases.

METHODS OF USE

The depolymerases of streptodornase may be administered in solution or suspended in lubafax (brand of surgical lubricant) The contents of each vial containing 100,000 units of activity are usually dissolved in 10 to 20 ml of physiologic saline solu tion, the amount of diluent depending upon the concentration of the enzyme desired for the specific patient A more dilute solu tion has been used successfully when 200,000 units were dis solved in 1,000 ml of physiologic saline solution for the treatment of a large burn in general however, for the treatment of localized collections of pus, the stronger concentrations of en zymes are desired. The powder dissolves readily with gentle swirling To facilitate the application of the enzyme to a flat external surface, 100 000 units of the depolymerases may be sus pended in 30 ml of lubafax Solutions of the depolymenzing enzymes of streptodornase in physiologic saline solution should be made fresh daily and stored in a refrigerator when not in use The suspension of depolymerases of streptodomase in lubafax will keep its potency for several days and should also be stored in a refrigerator

The depolymerases of streptodomase should not be administered systemically, for a local effect, only, is desired Further more, the effects of the intravenous administration of the depolymerases of streptodornase are unknown

Allergic reactions to the depolymerases of streptodomase have not been observed Because the enzyries are antigenic, however, their administration should be associated with the usual precautions. Although Hazlehurst' has observed that a high titer of antistreptodomase has always developed after the administration of significant amounts of streptodomase, he has not observed significant intofference with the therapeutic effects of the enzyme after prolonged administration. If a decrease in the thorapeutic effect is noted during the later stages of treatment after a good initial response, it might be well to increase the amount of the depolymerases of streptodomase used

PRINCIPLES

The principles guiding the use of the depolymerases of streptodornase are essentially those of varidase, or streptodornase. The depolymerases of streptodomase will not cause lysis of fibrin and therefore should not be used where removal of a sterile col lection of blood is desired

- 1 SI ugh must be removed from the wound because the depolymerases of str ptod mase w ll not liquefy it
 - 2 Foreign bodies must be removed from the wound
- 3 The blood supply to the area must be adequate to provide magnesium ion to activat the depolymerases of streptodomase
- 4 An excess rather than a minimal amount of the depolymerases of streptodornase must be pr vided
 - 5 The prope pl must be maintained
- 6 The d polymerase of treptodornase must be placed in direct cont ct with the pus
- 7 The products of dig stion must be removed effectively and frequently Becau the amounts of the substrates and the e zymes come to an equil br m the end product must be removed to prevent revers I of the reaction In addition r mo al of the digested pus p muits more ff ctive ction of the humo I mechani ms and of the particular chemother peut c or nubiotic ge t u ed Likewise removal of such products will prevent the format on of a dead space and encour ge apposition of walls of the wound which are condit as nece by for he ling
- 8 Treatm nt of s vere inf ctions shuld be on a c ntinuou rather th n on an intermittent b is
- 9 The concomitant use of selected ch m therap ut c or ant biotic agent is dicated f t bt d m

TABLE 1 R It ft atm twthth dplym

D		Numb f	R le	R lt		
	·	pt t	E II t	Good		
Ab		15	13	2		
Burn		1	1	0		
P m		1	0	1		
T be lo		3	3	0		
T tal		20	17	3		

The series consists of 20 patients who had a wide variety of infections (table 1) Fifteen patients had abscesses of various types three had tuberculosis one had a severe burn and one had pneumonia In the patient with pneumonia, the depolymerases of streptodornase were put in a solution which was used as an aerosol

CASE REPORTS

Case 1 A 58 year-old man was admitted to the medical service of the hospital on 14 March 1953 for the treatment of advanced bilateral pulmonary tuberculosis. The patient received streptomycin and sodium para aminosalicylate. A mass developed over the cartilage of the right seventh rib. Fluctuation and spontaneous drainage occurred but recurrent episodes of drainage were noted. The roentgenograms of the chest did not show osteomyelitis of the ribs. The patient was seen by a surgical consultant on 5 August a diagnosis of tuberculous abscess was made and incision of the area recommended.

On 17 August the sinus and the cartilage of the seventh rib were excised Two No 18 French rubber urethral catheters were placed in the wound which was then packed with nylon gauze. The pathologist's report of the excised tissue was of tuberculosis.

The depolymerases of streptodornase 50 000 units in 25 ml of physiologic saline solution were injected through one of the catheters were claimed for four hours to permit digestion. Air-vent suction of about -8 cm of water was applied to the wound until the time of the next injection. The catheters accidentally came out on 20 August. Once a day for the next 11 days 10 000 units of the enzymes in 3 ml of lubafax were placed into the wound after which it was clean enough so that a secondary closure could be done on 1 September. Fight days later the wound was healed. The patient was transferred to the medical service for further treatment of the pulmonary tuberculosis on 11 September when he was seen on 16 April 1954 the wound had remained healed.

Case 2 A 63-year old man was admitted to the medical service of the hospital on 23 June 1953 for the treatment of pericarditis. The ment genogram of the chest was essentially negative. Repeated examinations of the sputum were negative for acid fast bacilli

On 31 August the patient was seen by the surgical consultant because of a sinus in the right infraclavicular area which had been present for about two months. It was thought that this was due to a ruberculous lymphadenitis. The diseased supraclavicular lymph nodes and the sinus were excised on 4 September and the wound was left open being packed with nylon gauze. The pathologists a report was fibrocaseous tubercu losis of the lymph nodes and soft tissues with formation of a sinus tract. The patient was given penicillin streptomycin and sodium para aminosalicylate. In addition 15 000 units of the depolymerases of streptodomase in 5 ml. of lubafax were applied to the wound once a day

The diplymera es if treptodornase with sipplied by the Liderle Liboratic s Dison America Cyanam d'Comp my Pearl Rist NY

from 5 through 14 September it became clean and secondary closure wa done on 15 September Nine days later the wound was healed and the patient was tran ferred to the medical service for further treatment. When he w seen on 16 April 1954 the wounds had remained healed

Case 3 A 43 year old man was admitted to the medical service of the hospital on 3 July 1953 with a fixed mass in the left lower quadr nt of the abdomen The pat ent was en in surgic I consultation on 9 July and appropriate labo atory studies for a diagnosis were recommended The mass gradually became soft A di gnosis of a left psoas abscess was fin lly made. The ab ce s was in ised on 21 July with evacuat in of about 500 ml of pus two No 16 French rubber cathet s were placed in the wound which was then packed with nylon gauze. Culture of the pus yielded a species of micrococcus. The depolym rases of streptodornes 100 000 u its in 10 ml of s line solution were injected through one of the catheters into the wound twice daily from 21 through 28 July Th catheters were cl moed for four h urs to permit digestion Air vent suction f about -8 cm of water wa applied to the w und until the time for th next injection On 27 July the cav ty held about nine m Il lit is Th c theters were removed on 29 July Due to moderate increase in the am unt of the purulent drain pe tre tment with 100 000 un ts of the depolymerases of streptodorn se in) ml of phys ologic saline olution was given from 1 through 11 August Progressive heal no was n ted. The depolyme ases of streptodornase 15 000 un t in 5 ml of lubafax wer applied to the wound tw ce daily from 12 through 21 Augu t The wound was h aled and the p tient w di charped on 25 August

C s 4 A 29-year ld man w s adm tted to the surgic I serv ce of the hospital on 27 July 1953 with history of pain in the right lower quad r nt of the abd men and chills and f ver of about five days dur tion A append cromy had been d ne when the patient wa f ur years of age At the age of 28 an incis on and provision for drainage of a errocecal abscess h d been made. At the admission a firm mass associated with a cons der ble degr e of cellulitis was pre ent in the right lower quad rant of the abdomen A gradual resolution took pl ce n the ensuing per od and on 5 August n nc si n was done a d about 300 ml of pu were ev cu ted Two No 18 French rubber catheters were plac d in the d pths of the w und which w s p cked with nylon The culture of the pus howed E ber chia col The d polymerases of streptodornase 100 000 units in 5 ml of physiologic saline solution were inserted through one of the cathete s tw ce d y from 6 through 17 August The catheters were clamped for four hours to permit digestion and air vent suct on of about -8 cm of water wa applied to the wound until the time for the next injects n The cavity held about 20 ml on 8 August and about 10 ml on 13 Aug st The cathet is were removed on 12 August The d polymer es of streptodornase 10 000 units in 3 ml lubafax were ppl ed to the wound t ice daily from 18 through 24 August on which day the wound was found to be healed. The p tient was discharged from the hospital three days later and instructed to return for further treatment and possible operation in about three months. He was admitted to the hospital on 30 November and examination showed essentially normal findings. The patient refused operation and was discharged from the hospital on 16 December 1953

Cose 5 A 28 year old man was admitted to the hospital on 26 August 1953 with an infection of about six weeks duration in a recurrent pilonidal cyst. Nine operations had been done elsewhere at different times to eliminate the infection. The last operation had been done at the hospital on 12 January 1949. An infected pilonidal sinus about 2 cm long from which pus was draining was present. On 28 August the sinus was incised and drainage provided by a nylon pack. Crystalline procaine penicillin G was administered from 28 August through 5 September. But the wound did not become clean. About 15 000 units of the depolyner ases of streptodornase in about 5 ml. of lubafax were then applied to the wound twice daily from 10 through 16 September. When the patient was discharged from the hospital two days later, the wound was healed

Cose 6 A 36-year-old man was admitted to the redical service of the hospital on 11 September 1953 with a history of chills and fever of about 10 days duration About six days prior to admission he noted pain in the right chest and axilla which was aggravated by breathing coughing and movement Previous treatment 1 ad consisted of the administration of penicillin and one of the sulfonamides. The patient had served in the South Pacific theater of operations during World War II and had had amebiasis dengue fever and malaria.

There was a moderate degree of tenderness and dullness to percus ston over the right posterior hemithorax. Crackling rales on inspiration were heard in the same area. A slight degree of tenderness was present in the epigastrium and the right upper quadrant of the abdomen. The patient continued to have chills and fever with the temperature rising as high as 106° F. Penicillin and chloromycetin (brand of chloramphenicol) were administered with little effect. The white blood cell count rose to 30, 200 per cu. mm. of which 83 percent were polymorphonuclear neutrophilic leukocytes and 17 percent were lymphocytes. Repeated blood cultures were sterile. The various agglutination tests were negative. Repeated examinations of the stool for ova and parasites were negative.

On 12 October a toentgenogram of the chest revealed an elevation of the right side of the diaphragm and on fluoroscopy movement of the right side of the diaphragm was not seen. The patient was seen in surgical consultation and it was thought that a right subdiaphragmatic abscess or an abscess in the liver was present. Aspiration of the subdisphragmatic space however, did not yield put. The clinical picture however strongly indicated that pus was under the diaphragm.

On 13 Cetober a right subcostal incision was made and the liver palpated Many dense adhesions circumscribed a firm mass about 10 cm in diameter high on the l t ral surface of the light lobe of the liver Aspiration of the site through the sixth intercostal space in the mid axill ry line over the adherent area prod ced pus. A segment of the seventh r b about 4 cm 1 ng in the midaxillary line was emoved and about 200 ml of thick vellow brown pu was removed from the absc ss Two No. 18 French rubb r catheters we e inserted into the cavity. After a charge of rubber gloves superficial dr pes and instruments the subcostal wound was closed

The pus was sterile aerobically and an erobically Penicillin and ureomycin were administered postoper tively. The dep lymerases of treptodomase 100 000 units n about 10 ml of saline solution w re but into the bacess cavity twice a day from 14 through 28 October. The catherers were clamped for four hours to perm t digestion and then the pus which had become much thinner was permitted to dr n into a bottle From 16 through 28 Octob r air vent suction using a Stedman pump was applied to the abscess cavity during the periods the c theters were not clamped Two hundred millil ters of much thinner numi at drain ge wer collected from 14 t 17 October while fr m 17 to 21 October another 200 ml were collected The dr in ge gradu lly de cre sed and the abscess became smaller A culture of the pus on 24 Octob t how d Pseudomonas ae g n sa and St ptoc ccu pyog nes The c theters were gradually hortened and then em ved on 5 N vember The w und w h led on 16 N vember Thr e day I ter the pat enr was d scharged from the hosp tall and on 18 February 1954 he was asymptomatic and sh wed a 23-bound gan n we ght The lunes were clear the wound h led and the l ver not palp ble

Case 7 A 29 year old man was admitted to the hospital on 15 Sept m ber 1953 fo the treatment of bil teral cervical tuberculou lymph d enitis of about nine years duration A course of treptomyon g en previ usly h d not p od ced a good therapeuric re ult. The p tient was gi en streptomye n sod um para aminosalicylate nydrazid (brand of i omazid) and penicilling the last for treatment of coxste t syph ls On 2 Oct ber the inf cted lymph nodes on the ght ide of the neck were excised and about 5 ml of free pus were encountered. Two No. 18 F ench rubber cathet s were placed int the wound The p thol ogist report of the excised t saues was of fibrocaseous tuberculosis The depolymerases of streptod mase 50 000 unt in 5 ml of phy olog c sali e sol tion were i jected int the wound twice day from 3 through 12 Oct ber The cath ters wer clamped for four hours to permit digestion and then it vent s cti n of about -8 cm of water by means of a Stedm n pump was applied until the time of the next inject of The catheters we removed on 12 Oct ber and o 15 October the wound was healed. Four days I ter the infected lymph nodes in the I ft s de of the ne k were excised and a mil r course of t eatm nt pursued The catheters were removed on 27 October and three day 1 t r th wound was he led Several small lymph nod s in the posterior cervical ree n w re removed on 3 N vember. The wound was clos d and dra nage provided by a Penrose drain which was removed the following day The wound was healed on 12 November and the patient was discharged from the hospital five days later

Case 8. A 41 year old man was admitted to the hospital on 29 Septem ber 1953 with first second and third degree burns of about 20 percent of the right side of the body, incurred on 26 September The patient had been treated at another hospital and then had been transferred for further treatment. The patient was given aureomycin streptomycin and penicillin The dressings were removed on 1 October and a moderate de gree of infection of the burns was found Four No 18 French rubber catheters were placed down to the burns and a voluminous gauze dressing was applied The depolymerases of streptodornase 100 000 units were dissolved in 1 000 ml of physiologic saline solution and allowed to drip through the catheters twice daily from 1 through 15 October when the dressings were changed and the burns found to be clean e nough to receive split skin grafts On 22 October about a 90 percent take of the skin grafts was found and more skin grafts were applied Healing was found to be satisfactory eight days later the burned area was then almost entirely covered by additional skin grafts. On 5 Novem ber two small areas were found to need additional grafting but due to a slight degree of infection the procedure was postponed and treatment by tub baths was given On 19 November the wound looked good and the additional areas were grafted but only about a 20-percent take resulted. The patient was given physiotherapy The remaining ulcers healed slow ly and additional skin grafts to the small areas were done on 2 and 18 February 1954 The wounds were healed when the patient was dis charged from the hospital on 12 Harch 1954

COMMENT

The use of depolymerases of streptodomase in the treatment of infected wounds has produced faster healing than has occurred in similar wounds not treated with the enzymes. The digestion of descryibonucleoprotein and descryibonucleic acid has not produced substances which are toxic or detrimental to the healing of wounds. The 20 patients treated had infections due to a wide variety of bacteria. The experience gained in this study by using the depolymerases of streptodomase alone substantiates earlier work in which varidase, a combination of streptokinase and streptodomase was used clinically Infected wounds usually contain fibrin and it is advantageous to have the streptokinase present with the streptodornase.

SUMMARY

The depolymerases of streptodornase, by their enzymatic properties, effect the digestion of descryribonucleoprotein and descryribonucleic acid, when the compound can be brought into direct contact with pus for a sufficiently long period. The diges

tion of pus by the depolymerases of streptodornase and the removal of the pus facilitates the formation of healthy granulation tissue and the earlier healing of infected wounds

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THE HIPPOCRATIC PHYSICIAN

One of the outst inding characteristics of Greek medicine (at the time of Hippocr tes) was its freedom from superstition magic a d witch craft Inevitably som of the Greek views on physiology and pathology pp-ar fantastic to our enlighten d eyes. Their f ntasy does not de however f om any injection of the superstit o element but T1 simply bec use the wid ranging intelligence rising upe or to all ide's of e perimentation or proof launched itself into the wo king fields of imag native spec I tion on wings that were scarcely ited to thes flight Some of their glesses-perhap kinder wold than spec I t on -c me near to the atomic theory and the b cters I cause of dise se All n ll then it w s rel tively easy for the Gre k phy sician to be sa e nd h nest pr ctitio r of hi rt ser ing h pa tie to the best of his ability and relying largely on his imple therapy and the benefic nt op r tion of the vis m dicatrix nat de

> -SIR JOHN CHARLES M D La t p 455 F b 27 1954

AN OUTBREAK OF ACUTE EPIDIDYMITIS ASSOCIATED WITH PNEUMONITIS

EDWARD GARTMAN L eutenant Colonel MC USAR

BETWEEN 26 February 1951 and 10 March 1951, 41 men, ground crew personnel from an Air Force squadron statoned at a small base in Northern Kyushu, Japan, were admitted to this hospital with acute epididymitis An additional 10 or 12 men with this condition were hospitalized elsewhere because of lack of bed space in the urologic section of this hospital

All 41 patients presented a relatively consistent picture. They were between 19 and 29 years of age. The disease was ushered in with generalized malaise and a sense of chilliness, followed shortly by the appearance of a painful swelling of one epididymis, never both. In 12 patients the onset was either immediately preceded or accompanied by a dry, hacking, nonproductive cough and pain in the chest. None of the patients had any urinary symptoms.

The men were acutely ill, 37 had fevers ranging from 101 to 103 F Seven had physical and radiologic evidence of a basal pneumonitis, three others had scattered rales throughout both lung fields, while the chests of the remaining 31 were clear All had the typical findings of an acute epiddymitis, uncomplicated by either an acute hydrocele or orchitis Only the globus major was involved in 40 patients. They were more ill than patients with ordinary nonspecific epiddymitis, but had none of the prostration and raging septic fever of adults with the orchitis of mumps. Aside from a varying though generally mild leukocytosis, all laboratory findings were within normal limits, and there was no pyuria.

Those patients were treated symptomatically with analgesics, elevation of the scrotum, applications of ice, and absolute bed rost No antibiotics were used Both the epididymitis and pneu monitis subsided spontaneously in an average of 10 days no dolay in the resolution of the epididymitis accompanied by pneu monitis was noted Patients with ordinary epididymitis treated on an identical regimen usually require an average of five days

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The lesions are contagious and autoinoculable tending to spread and recur until completely irradicated Some authorities believe that vertices of this sort are pathognomonic of gonorcheal infection, but this has not been the experience of this author or of others. There does however seem to be a direct relationship to irritating vaginal discharges perticularly trichomonas vaginities in women causing the warts in both men and women in all instances this possible a sociation should be ruled out or treated appropriately. The elimination of tricho-onads often lengthy and tedious is beyond the cope of this report. The importance of personal hygien measures is stress ed

TREATMENT WITH PODOPHYLLUM RESIN

Numerous forms of therap, have been recommended for venereal warts as for other types of verrucae Older methods include the use of alrevine and rerecurous chloride trichloroscetic acid and pots. num permanganate Roentgen treatment electrocautor ization and surgen have also been employed Since the original report by haplan' in 1942 on the efficacy of podophyllum resin however variations of this method have become recognized as the therapy of choice

Podophyllum is the resinous product of the May apple or man drake root which also contains the constituent podophillotoxin It was long u ed as a cholagogue and cathartic Podophyllum resin in either light petrolatum or mineral oil was first used and the dramatic results of a single application to venereal warts caused intere t among other investigators varying the redia Podophyllum re in has since been used in mixture with ethyl alcohol flexible collodion tincture of benzoin and other agents Currently the commonly used forms are 25 percent podophyllum resin in oil and 20 percent podophyllum resin in 95 percent ethyl alcohol. Pecent work by Sullivan and Hearin indicates that the active principle of the mixtures is a peltatin a crystalline product of the resin They have found a mixture of 1 percent pel tatin in tincture of benzoin as efficacious as the podophyllum re_in mixtures and the peltatins have the added advantage of producing less imitation Further peltatins may be dissolved in cau tic bales (which cause loss of potential of ordinary podophyllur re in) aiding in the treatment of cornified warts. The peltating are very promising

The mode of action of podophyllum resin was first thought to be based upon spasm of blood we sels causing necrosis. It is now established that podophyllum products selectively alter cellular metabolism in the warts causing cell death Histologically typical dead cells show distorted mitotic figures and are termed podophyllum cells. These are similar to colchicine figures—sugge ting that colchicine might prove effective In-

deed, colchicine solutions have been used with excellent results, but are not recommended because of the severe toxicity of the drug

Podophyllum and the related compounds have been used in the treatment of numerous other conditions including verruca vulgaris, verruca plantaris, neurodermatitis, and carcinomas of the skin and bladder "Nowhere have the results been as uniformly good as in the treatment of venereal warts

METHODS AND RESULTS

I have carried out podophyllum resin treatment of 20 consecutive patients with venereal warts, using either petrolatum or alcohol as the vehicle. In all instances regression occurred, and in nine patients only one application was necessary for complete cure. The greatest number of applications made was seven in one white male patient who over a six month period had repeated growth of condylomata acuminata on the frenulum of the penis. His wife was suspected of having severe trichomonas vaginitis, but did not appear for treatment. In general there was no difference in the course or result of those treated with the oil mixture as compared with those treated with the alcohol mixture, although there was less skin irritation in those treated with podophyllum resin in alcohol.

The series consisted of two women and 18 men, all white with the exception of one Negro The lesions varied in size, location, and duration, but in the men were predominantly on the frenulum and at the retroglandular sulcus All patients responded well with minimal discomfort during treatment except two patients with large clusters of perianal warts. The latter two had lesions moderately resistant to therapy, and they suffered some discomfort in the initial treatment period.

A simple and consistent regimen was followed with all patients After a cleansing of the affected areas, the podophyllum resin mixture was applied liberally with a cotton applicator Excess medication was removed with dry cotton, and patients were instructed to take sitz baths eight hours later to remove the remaining solution On the following day, blanching of the warts was noted in all instances necrosis ensued on the second and third days Sloughing proceeded from the third to fifth days and, if necessary, additional application was made on the lifth to seventh day in none of the patients did ulceration, infection, or scarring result The author noted no ill effects of the podophyllum resin treatment, though epithelial hyperplasia has been reported.

The prognosis following therapy with podophyllum resin is excellent and, if initial treatment is thorough, there is no reason

to believe that the warts will recur It has been stated that the warts must be completely removed lest there be further growth Of the 20 nationts treated there were recurrences in only three One was found in a man whose wife was suspected of trichomonas vaginitis another also in a man was a possible regrowth recur rence in the third patient was of undetermined cause. All of the verrucae treated did respond though those in the perianal region did so more slowly

SUMMARY

Condylomata acuminata relatively common in military practice are discussed with respect to etiology incidence diagnosis treatment and prognosis Podophyllum resin therapy is briefly presented with an accepted regimen of treatment. The dramatic results of such treatment in 20 patients coincides with the ex perience of others

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FOREIGN BODIES IN THE GASTROINTESTINAL TRACT

ROBERT T GANTS Colonel MC USA JACK B JAY Major USAF (MC)

THE MEDICAL literature contains innumerable records of persons who have swallowed objects of various sizes and shapes by accident or intent.

Accidental swallowing of a foreign body is by far the more common, and occurs predominately in infants and children It also happens in adults when they are startled or when seized by a coughing spell while a foreign body is in the mouth Case 3 illustrates this point Deliberate swallowing of an object or swallowing on a dare has been reported most commonly among psychotic patients' and malingerers. Hysterical anesthesia in some patients may permit ingostion of large or even sharp objects.

About 25 percent of all swallowed foreign bodies lodge some where in the esophagus ² This is a problem for the endoscopist and will not concern the surgeon unless complications, as illustrated in cases ² and ³, occur Almost all foreign bodies which lodge below the esophagus will do so in the stomach or duonum if the object has passed the duodenum, complete passage, in most instances, may be expected ³ A few cases of entrapped foreign bodies in the appendix, ileocecal valve, or in a Meckle's diverticulum have been reported

SYMPTOMS

Most of these patients have few, if any, gastrointestinal symptoms. This is especially true in psychotic patients in whom un explained clinical or roentgenographic findings may be the first evidence of a foreign body. Ordinarily there is a long latent period between the time of ingestion and the onset of clinical signs of a complication.

Perforation rarely occurs but when it does it takes place very slowly and is walled off by inflammatory changes. Low grade fever mild abdominal pain, and localized tenderness are usually all that can be elicited. Minor bleeding and comiting may also occur. Because of the lack of symptoms, in ested foreign bodies.

are usually suspected on the basis of the history and confirmed by roentgenographic examination, because fortunately almost all foreign bodies are radiopaque Roentgenologic examinations are also useful in following the progress of the foreign body through the gastrointestinal tract Unfortunately however they are not too reliable for pinpointing the exact location of the object

TREATMENT

Practically any foreign body which reaches the stomach will be passed spontaneously and the stools should be thoroughly examined each day until the object is found The patient should remain on his normal diet and no laxatives should be administered because increased peristalists caused by laxatives and bulky foods increases the danger of perforation of the gastrointestinal tract in the presence of a foreign body Strenuous physical activity should not be permitted when the ingestion of sharp (oreign bodies is suspected

INDICATIONS FOR OPERATION

Indications for surgical intervention are (1) roentgenologic evidence of retention of a foreign body in one position over a period of several days especially in the case of such sharp objects as open safety pins needles nails glass et cotera (2) foreign bodies of such size and shape that passage is impossible and (3) clinical evidence of perforation or obstruction Smooth objects may take from soveral days to several weeks to pass through the gastrointestinal tract and they cause no significant damage The treatment in each case must be judged individually because no set rule applies to all

CASE REPORTS

Case 1 A 20 year-old m n was first hospital zed in December 1953 for bizarre behavior and a diagnosis of par noid schizophrenia was The pati nt was preoccupied with xual problems and on sever I occasions attempted to insert various articles into the rectum Sub quently he received electroconvulsive therapy On 27 March 1954 the p tient told the nurse he had swallowed an eight nich lead pencil thre week previously but he was asymptomatic On 3 May he began to vomit and complained of sener lized abdominal discomfort and had a low grade fever and leukocytos s. He had b en having loose stools for three days but they contained no blood. There were no localizing abdominal signs or other evidence of peritonitis. An abdomin I roent genogram was interpreted a showing no abnormalities. Fluids administer d intravenou ly and penicillin were started and the symptom subs ded The patient was allowed to be out of bed and following an unauthorized game of basketh ll the symptoms recurred Mo e roent genograms of the bdom n were m de The first roentgenogram showed

the outline of the lead pencil lying horizontally in the stomach. The second toentgenogram showed the object lying vertically in the second part of the duodenum (fig. I). A laparotomy was performed on 12 May and through a small duodenotomy a lead pencil five and three-fourth unches long was easily removed. The point was directed upward and had perforated into the under surface of the liver near the gallbladder.



Figure 1 (case 1) Roentgenogram of abdomen showing wooden lead pencil lodged in second portion of dvodenum

Surrounding the hepatoduodenal ligament a marked inflammatory reaction had effectively scaled off the perforation in the duodenum from the general peritoneal cavity. The patient's postoperative course was uneventful

Case 2 A 42 year-old woman was admitted to the hospital for electroconvulsive therapy because of depression and suicidal thoughts A history of bizarte suicidal attempts such as stuffing toiler paper into her throat was obtained She had a low grade temperature elevation A roentgenogram of her chest on 5 June 1952 showed no abnormalities The patient was given one electroshock treatment On 2 July a repeat roentgenographic examination of the chest revealed a left pleural effusion Because of this electroshock therapy was

discontinued and insulin therapy sub tituted. There w s a progressive clearing of the chest and on 11 Feb uary 1953 a metallic foreign body resembling a sewing needle was seen near the left pericard ophrenic angle The patient repeatedly denied swallowing the needl A left thoracotomy with removal of a sewing n edle from the ba e of the pericardium opposite the apex of the heart was done on 26 Febru ry 1953 Only a few fine adhes ons were observed between the base of the lung and the dome of the di phragm The postoperative course pneventful



Figur 2 (c 3) P t 0a t or iew howigth m met

Case 3 A 42 year-old man was truck by an automobile on 25 D cember 1951 He ust med a fracture of the left parietal b ne and a simple fracture of the right tibia and f bula On 4 January 1952 a right subdural hematom was uccessfully evacuated On 13 January the patient stated that h had coidentally sw llowed a clinical thermom eter during a coughing spell (f g 2) Open reducti n and internal fix ation of the fractu ed t bia plus g stroscopic examinati n were carri d our under general anesthesia on 5 February During the prolonged at tempt to remo e th thermometer through th gastro c pe the patient became evanotic and had a marked fall in blood pressure Immediate

physical and roentgenographic examination of the chest revealed a complete left pneumothorax indicating a perforation of the esophagus A closed left thoracotomy drainage was immediately instituted to drain the expected empyema which subsequently developed A Levine tube was placed in the stomach for decompression Under this management the fistula soon closed and on 20 February gastrotomy with removal of the thermometer was accomplished The thermometer had been in the stomach five weeks and had shown no evidence of moving The patient's postoperative course was uneventful

SUMMARY

The symptoms of swallowed foreign bodies are usually minimal and there is a long latent period between the incident of swallow ing and the onset of clinical signs of complication A good his tory and a high index of suspicion are the most important facets leading to a correct diagnosis A patient's statements concerning swallowed objects should not be regarded lightly Examination of roentgenograms by the physician immediately responsible for the patient's care is most important Unexplained fever, pain. or roentgenographic findings should be carefully investigated Repeated studies and examinations are often necessary to iden tify the presence of a foreign body Only a few patients need be subjected to surgical removal of the foreign body, because most objects which have reached the stomach will pass on through the gastrointestinal tract Surgical intervention should not be instituted on the basis of the history alone, but rather on the evidence of peritonitis, obstruction, or lack of progression of the foreign body through the gastrointestinal tract in patients needing operative removal, the procedure is usually accomplished easılı

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When a man lacks mental balance in pneumonia he is said to be delirious. When he lacks mental balance without the pneumonia he is pronounced insane by all smart doctors.

—Martin T Fischer

RESULTS

In 1954 trilene was used in the urologic outpatient clinic of this hospital in maling 200 cystoscopic and six retrograde bye lographic examinations and five urethral dilatations. The results (from the viewpoint of the patient and the urologist) were con sidered good in 182 patients (66 percent) fair in 18 (6 percent) and poor in 11 (6 percent) Results were considered good when the patient was completely relaxed and offered no complaints during the procedure and recalled no discomfort after the trilene was discontinued The results were termed fair when the patient was not entirely relaxed or complained moderately during the procedure but the procedure was successfully completed. The poor results indicated those procedures which were terminated because of discorfort to the patient. The use of trilene allowed the completion of 94 percent of the procedures attempted to the satisfaction of both the patient and the urologist Furthermore the nationt requires no preliminary fasting or medication and can return to duty directly from the clinic

Because patients were expected to return to duty after the termination of the procedure side effects were carefully noted These were agitation in 8 patients screaming 8 hallucina tions 24 nausea 23 vorniting 2 weeping 1 hilarity 4 and severe tremor in 1 patient. The various side effects such as screaming weeping hilarity et cetera were not recalled by the patient after the analgesic was discontinued. The average time required by the patient to regain full control of his faculties was 3 5 minutes

SUMMARY

Trichloroethylene inhalation was used for transurethral procedures on an outpatient basis in 211 case Its use was con sidered satisfactory in 94 percent. The absence of serious side effects and the rapid return of the patient to normal makes this the analgesia of choice in outpatient prologic procedures

REFERENCE

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You b long to compant s boads | llowships assoc at one fratern t s brothe boods lodges un one and com mit es but wh a your fr ends?-Martin T F scher

ORAL LESIONS CAUSED BY ANTIENZYME DENTIFRICES

WILLIAM B SIMMS I seutenant Colonel, DC USA

SINCE the addition of antienzymes to the various commercial dentifrices physicians and dentists are encountering a new oral lesion. This entity has taken many bizarre and complicated forms and its correct diagnosis necessitates inquiry as to the patients use of antienzyme dentifrices. The symptoms have been alarming to most patients a few developed neurotic fears such as cancerphobia, before the correct diagnosis was established.

SYMPTOMS

In most cases the primary symptoms associated with this con dition were an irritated, painful mouth and a tingling or very sen sitive tongue Most patients were referred for consultation and diagnosis because the lesions were similar to the oral manifes tations of systemic or local disease

The tongue was most often involved and the sites most affected were the fillform papillae along the sulcus medianus linguae, the foliate papillae, and, occasionally, the dorsur On raro occasions the floor of the mouth was involved. The patient usually describes his symptoms to the doctor in one of the following ways.

"I have a stinging sore tongue, with little white spots

My tongue is so sore I can hardly touch it with my teeth I have noticed that it has no coating and is beefy red

My tongue tingles and has a numb sensation Foods do not taste as good as usual, and spicy foods irritate my tongue very much "

A white membrane is peeling from my mouth

Many patients have a painful raw beefy red tongue and an oral mucosa varying in appearance from a moderate redness to a severe leukoplakia. The lesions may resemble herpetic stomatus of the lip and buccal mucosa, herpes simplex or any other variation thereof. They may present a carcinomatous appearance except for the fact that usually they are papular and vesicular rather.

From V lley Fo ge Army Ho pini Pho nixville, Pa

than indurated multiple rather than single and on digital examination are accompanied by severe pain. The diagnosis may be difficult because in some instances the distribution of the lesions may be local rather than Leneral and they may be of several months duration.

The next most frequent symptom associated with this condition is a denudation of the buccal mucosa. A pale or whithis film is exfoliated from the buccal mucosa, and appears as if it were stripped off the surface epithelium. This film may come off in its entirety or it may come off in small strips. Bleeding rarely results but the stripped area appears beefy red. In appearance this white plaque is somewhere between that of a lichen planus and a slight leukoplakia of the buccal mucosa.

The soft palate is the third area most commonly affected the uvula is involved only rarely A small lesson was seen on this organ on only one occasion. Involvement of the soft palate usually extends down toward the tonsillar fossa, and nearly always consists of papillary vesicular lesions that appear to be tiny mucous cysts

To recapitulate the most common symptom is a burning pain ful tongue with or without thrushlike lesions that vary in size from 1 mm to 3 cm Denudation of the buccal mucosa is the second most frequent finding.

A history of the use of antenzyme dentifices is the most important factor in diagnosing this particular syndrome. The lessons were first observed clinically at the time the antenzyme dentifices became available on the commercial market. In ascertaining the cause many laboratory procedures were performed to rule out all other diseases. Biopsied specimens showed only acute in flammation. Only one patient out of about 50 presented a coexistint loukopilakia.

Summanes of three cases may serve to illustrate the typical history symptoms and characteristics of this syndrome

CASE REPORTS

Cose 1 A 22 y ar-old matried woman seen in consultation presented all of the lesions characteristic of this cond to n in a very acute form Her tongue was painful and had a white glossy denuded appearance similar to that associat d with early anemia. On her lips and particularly around the commi suries were small heppeslike lesions. A white shiny filmlike material was sloughing off the buccal mucosa in strips. Nonulcerated papillary vesicles covered the soft palate and extended t ward the tonsillar fossa. The palat was very painful and gave the pittent considerable discomfort on swallowing. The uvula was not involved. The predominant sympt in wa that of pain and extreme en

sitivity of the mouth to anything in the way of food or liquids the tongue was so painful that the patient could barely endure its contact against the teeth

Her history revealed that for several years she had been using the dentifice. Five days previously she had tried as usual to obtain "Y dentifrice without antienzyme but all the pharmacist had in stock was "X dentifrice with antienzyme.

The patient was told to discontinue the use of all dentifices was given a nonitritating antacid mouthwash consisting of one tablespoon of milk of magnesia in one-half glass of warm water and was told to use only water to brush her teeth All laboratory procedures including examination of a hopsied specimen of the area were normal except that the biopsied specimen showed an acute inflammatory reaction. At the end of three weeks the oral manifestations had disappeared.

The antienzyme dentifrice was only the suspected cause of this young woman is disease. Many systemic and local diseases accompanied by similar oral lesions were considered, but all laboratory tests failed to indicate any other cause. The patient had never used antibiotics oral troches with antibiotics or drugs of any type nor had she changed her smoking habits. About two months after she was rid of the symptoms she used. Y" dentifrice without antienzyme without any hamful effects.

She was then asked to switch to \(\) dentifice with antienzyme for two days \(\) Within 48 hours she experienced the same symptoms as before but to a less severe degree and had to discontinue the use of dentifices for about three weeks \(\) She then used \(\) \(\) dentifice without the antienzyme for six months and had no further trouble \(A \) the end of this time she again changed to \(\) dentifice with antienzyme and the oral lesions recurred within 48 hours. These cleared within three weeks \(\) She has since changed to \(\) dentifice without antienzyme and has since experienced no untoward effects

Case 2. The experience of this patient parallels that of a considerable number of the patients studied in that only two symptoms of this condition were noted. These were a sensitive painful tongue and a white plaquelike film which peeled off the buccal mucosa in strips, leaving it raw. Except for the oral lesions his history and the findings of a complete physical examination and of various laborator, procedures were normal.

The diagnosis in this patient as in several others with similar conditions was puzzling because for several months he had been using Y antienzyme dentifice without any untoward effects. He then used Y antienzyme dentifrice for about two weeks

This patient was treated in the same manner as was the first, and at the end of about one month he returned to using X antienzyme dentifice without any ill effect. In co-operation with the study being made of this condition he again tried Y antienzyme dentifice with a recur

rence of the symptoms previously described. It therefore appeared the his sensitivity we to the antenzyme in the Y dentifice only and not to that contained in X dentifice.

Cose 3 This patient a 26-year-old physic an engaged in general practice and cognizant of the variou oral manifest ions of systemic and local disea e presented rather unusual case. In his efforts to discover the reason for his condition he had during the past year consulted numerous specialists had many 1 boratory studie don and had even be no hospitalized on one occas on No one had been able to give him positive relief and because of the nature of the lesions he had develop da cancerphobia

His history appeared to resemble that of patients in whom the lesions of stomatitis appear and disappear regardless of treatment. On close restioning it was discovered in the and his wif had been rath rendiscrimin to in purchasing dentifices. For several years they he dused 2 dentifices and did not experience any difficulty. A year ago however they changed to the antienzyme dentifices usually purchasing a different brand each time they bought at an infine.

In recalling the course of his symptoms the patient remembered that some of the dentifices caused less severe sympt ms than others however he could not remember when particular dentifice he was using when the symptoms occurr d most intensely. He did not however that seemingly with a chang from one antenzyme dent face to noth the symptoms became more severe. He described the lessons as occurring usually on the tongue nd occ ionally on the palate. At time, his tongue became so painful the the could so cely tole to it contict against his teth and swallowing became difficult. He had been eating a bland diet and could not tolerate contact of uch tems as to tor other tymes of nouls are sainst his tongue.

When this patient was examined he had a very painful denuded tongue Area about 3 cm in le gdh resembled thrush. The papill e which were almost vesicular in appearance, show d denud uon. As in previous patients clinical and l boratory examinations wer normal

The less is x sponded very slowly to treatm nt and a 2 percent aqueou solutin of gentian violet seemed slightly to help the sensitive papillac of it tongue Aft r about two month some of the le ions were treat d once a day with a 4 percent solution of silver nitrate this seemed to alleviate the sensitivity more uccessfully than did the 2 percent aqueous solution of gentian violet Eventually the pain and lesson completely disapper red.

CONCLUSIONS

Many people are using antienzyme dentifrices without developing any of the afore-mentioned symptoms or lesions. It seems bowever that persons using antienzyme dentifrices should use one commercial brand, rather than switch from one to another because the cases described herein show that changing brands seems to build up or produce a sensitivity to the antienzyme

It is possible that the antenzymes, in addition to neutralizing the enzymes necessary to bacterial growth, also neutralize some of those enzymes which are necessary to the existence of the normal oral epithelium, thus producing a condition which causes a degeneration of the surface epithelial cells

In no way do I discount any of the ments of antenzyme dent fnces, but only wish to point out a new syndrome in the array of oral conditions. Many patients using the antenzyme dentifrices have stated that when they began using them they noted pain in the tongue and mouth which gradually disappeared on continued use of the dentifrice. Some patients have noticed the oral syndrome only after changing from one brand to another. Some have been unable to tolerate any type of antenzyme dentifrice. The majority of patients tolerate the use of antenzyme dentifrice Anowever it is my belief that presentation of these clinical expenences with the antenzyme dentifrices will be helpful in the differential diagnosis of certain oral lesions, and will stimulate further research, study, and discussion

LETTER FROM GERMANY

The following paragraph was received by Major General I S Ravdin MC USAR from a former resident in surgery at present assigned to dispensary duty in Germany

Though I have said it before I want you to know that what ever my assignment is to be I will do the best I can The government allowed me to finish my internship and some of my residency I wasn t taken during the horean war I m here and have my wife with me Of course I would like to do surgery—but I know that I owe the government and the Atmy more than they owe me A brief glimpse of these European countries makes it very clear that two years of service is a small pince to pay for being an American citizen

NORMAL BATTLE REACTION AND HORMONAL RESPONSE TO INJURY

WARNER F BOWERS Col L MC USA

THE THESIS that various emotional reactions and even local ized body wounds evoke a generalized and fundamental hormonal metabolic response is not new but correlation of isolated observations now permits formulation of a coherent theory many parts of which are well documented

Among the first to study the reactions of the body to emotions such as fear and rage were Beaumont who observed the gastric fistula of Alexis St Martin and Paylov who investigated the gastric pouches of his dogs. Both of these observers recorded the marked effect of fear rage, and other mental states on the secre tory and motile responses of the gastric mucosa Crile and Lower evolved the theory of anoci association because he believed that even under general anesthesia noxious stimuli were transmitted to the brain and even though not interpreted by the patient as pain were capable of producing shock For this reason he advocated local infiltration of an anesthetic agent in addition to general anesthesia to block such impulses. Cannon correlated these observations on the interrelationship between emotion and function and propounded the theory that trauma released toxic products which caused the general body reaction which he called The modern concept of shock as a train of events denendent upon decreased circulating blood volume did not gain acceptance until World War IL and previous writers included a host of other states such as syncope collapse et cetera under the term shock Unless this is understood clearly it is difficult to follow the older literature. Not until the work of Selve were these various observations finally explained by a cohesive theory which he called the alarm reaction According to this hypothesis rage fear and pain are capable of stimulating the adrenal medulla resulting in an outpouring of epinephrine (adrenalin) which in turn causes the hyperglycemia, peripheral vasoconstriction and oligina that had been recognized as sequelae of trauma.

NORMAL BATTLE REACTION

The point of ongo of the generalized reaction is so frequently an emotional state that it seems well to describe the normal

battle reaction Ranson's stated that this reaction is compounded of physical fatigue fear, various psychosomatic symptoms resulting from fear, psychologic symptoms resulting from this so matization, as well as the psychic reaction to battle, including all the elements of ioneliness, bodily discomfort, frustration, revulsion toward killing, et cetera. All such reactions cause over response of the autonomic nervous system and, consequently, the manifestations include muscular tension which may progress to "freezing" anorexia or nausea and vomiting, diarrhea, faintness, tremor, excessive perspiration, vague abdominal distress, tachy cardia, and unnary frequency. All of these states are known in varying degrees to students before a stiff examination, to some surgeons before a difficult operation, and to others subjected to severe stress.

HORMONAL RESPONSE

Savers' showed that increased adreno corticotropic hormone (ACTH) liberation into the blood stream from the pituitary is sum ulated by histamine epinephrine atropine, acetylcholine, cold heat, and hundreds of other agents or environmental changes. As the name implies, ACTH stimulates the adrenal cortex with re sults which will be shown shortly Administration of adrenalin causes a fall in vitamin C and cholesterol content in the adrenal cortex.7 this being a measure of its functional activity. This com plex mechanism is a continuous one operating at varying degrees according to the severity of stimuli and depending upon a host of stimuli, the limiting factor apparently being the blood level of adrenal cortical hormones because when a certain level is reached the anterior pituitary is temporarily inhibited from pro ducing ACTH In trauma when there is a sudden using up of the cortical homones, there is peak stimulation of the pituitary, the adrenal cortex being able to respond only if not exhausted by continued overstmulation Long' showed that this entire train of events can be set off experimentally by stimulation of an exposed sensory nerve, exposure to 4°C temperature for one hour, sumulated altitude of 20 000 feet, hemorrhage of two percent of body weight intravenous injection of killed Eschenchia coh organ isms, or scalding at 70°C for five seconds

ADRENAL CORTICAL HORMONES

Desoxy corticosterone acetate (DOCA) induces retention of sodium with consequent excretion of potassium Retention of sodium causes water to be held and this train of events explains why potassium must be replaced in some severe responses, why sodium chloride should be administered cautiously in the first few days after trauma and why oliguria is temporarily present. These changes ordinarily revert to normal within three days in

patients who can take a general diet by mouth Arbitranly attempting to change these reactions before that time may be meddlesome

Cortisone promotes gluconeogenesis by which tissue protein is converted directly to glucose and glycogen with concomitant excretion of the excess and liberated nitrogen in the urine This explains the glycosuria and hyperglycemia after injury and is the mechanism for the traumatic diabetes which formerly was a confusing development. Also cortisone favors dissolution of the lumphoid elements of the blood with release of gamma globulin antibodies and similar substances concerned with immunity to hactenal infection After a single trauma the lymphocyte count rapidly falls returning gradually to normal in 48 hours to This offers a practical means of measuring the effect of trauma and the bodily response and because the eosinophil count is simple this is used as the gage. After injection of ACTH the greatest eosinopenia results in from three to five hours so this fact gives a good criterion for judging adequacy of response to injury The 17 ketosteroids are associated with nitrogen retention and therefore are anabolic for protein while cortisone is catabolic These hormones are very similar in chemical structure to sex hormones such as testosterone and to the pituitary growth homones. This may explain the apparently beneficial effect of testosterone administration during convalescence to hasten healing and well heing

Reasoning teleologically it seems that the purpose of the adrenomedullary antenor pituitary adrenocrtical mechanism is to prepare the body to withstand traima making it e body as self sufficient as possible. The ability of muscle to contract anaerobically for a short time obviates the necessity for increased blood supply in effort, permits function even after decreased blood supply by injury and gives to a person an extra burst of speed and endurance which may be lifesaving. The quick increase of epinephrine raises the blood pressure for better cerebral function causes viscomstriction to slow hemoritage promotes gluconeogenesis so that the organism can survive without food intake iliberates antibodies to combat potential infection retains sodium and water which together with the oliguna spares thirst, and in every way prepares the organism to lie quietly mobilizing its forces for healing and recovery

In primitive times these mechanisms were important and lifesaving but now are loss necessary because of early resuscitation and surgical treatment. Nonetheless it is imperative that those mechanisms be fully understood in order to use them to advantage without boing meddlesome Furthern ore it is interesting to speculate that the alarm reaction which is apt to be chronically over active due to the stress of modern life may actually be the cause of a number of disease entities the cause of which has been obscure

Mental stress can influence bodily function, but it is not known why different persons respond in different ways. Why does one person respond to emotional stress by gastric hyperacidity while another responds by diarrhea or high blood pressure? The answers to these questions are not yet at hand but it is conceivable that the person who develops gastric hyperacidity may be the person who develops duodenal ulcer It is known that cortisone causes gastric hyperacidity and we know also that the person in stress is apt to eat poorly Here we have high gastric acidity, lack of neutralization because of poor food intake, and retention of acid because of pylone spasm Expenmentally, an ulcer can be most easily caused by hyperacidity in an empty stomach over a period of time Patients with ulcerative colitis have psychiatric problems and usually have parents who are borderline behavior problems themselves Is it not possible that the person who reacts to stress by diarrhea may develop ulcerative colitis if the personality and home environment are favorable to it?

Thyrotoxicosis with exophthalmos is a metabolic disease based on excessive pituitary stimulation with too much release of thy roid stimulating hormone Such a state is not really a surgical disease and exophthalmos may progress rapidly after thyroid ectomy We operate only because we are ignorant as to a better treatment. Is it not possible that certain persons may react to stress (and thyrotoxic patients exhibit other signs of sympathetic stimulation such as excessive sweating) by too great stimulation of the pituitary gland with secondary overstimulation of the thy roid gland? It is known that epinephrine causes high blood pressure, and expressions such as Don't get your adrenalin up' or "Don t get your blood pressure up" indicate a popular acceptance of the relationship between stress epinephrine, and blood pressure Organs which are chronically distended tend to develop thick walls and tend to lay down calcium Does arteriosclerosis follow or precede hypertension? Is it not possible that arterio sclerosis is an end result rather than a cause? Is this not the rationale for adrenalectomy in malignant hypertension before irreversible changes have occurred? These are fertile fields for basic and clinical research pointing out the widespread impor tance of the stress reaction and the hormonal response to psychic or physical trauma

SUMMARY

The thesis that various reactions and even localized body wounds evoke a generalized and fundamental homonal metabolic

response has been developed with presentation of the correlated theory documented as far as possible in the light of present frag mentary evidence The complex adrenomedullary anterior cituitary adrenocortical mechanism is always active but responds more vigorously to emotional or physical trauma setting in motion a senes of events which tend to protect the organism by funda mental temporary changes in the pattern of metabolism These changes must be understood to prevent meddle some therapy and to help us realize that this alarm reaction in itself may be harm ful in causing physiologic changes which we regard as a disease state

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ASPIRATION OF BLOOD DURING TONSILLECTOMY

It is remarkable that the longs are seldom injured in ton illecto y although the surgeo works at the entrance to the whole bronchial tree In spite of great care a m ll amount of blood m st be i hal dat e ery t nsillectomy Roentgen grams have shown traces of lipiodol at the lung b se when g uze wabs so ked in I piodol h ve been used ex o a mentally in tead of the usu I to 11 swab

Army aviation Finally it provides a basis for classification of the applicant as either qualified or disqualified for training in Army aviation This latter decision is essentially one of weighing the applicant s total assets against his total liabilities The ultimate purpose of the ARMA is to predict the probability of each applicant's completing aviation training, and his subsequent success in operational flying

The ARMA is based on all facts obtained from the medical psychiatric and psychologic histories from the general physical neurologic and special examinations including aptitude tests and laboratory tests such as an electroencephalogram when indi cated The ARMA also indicates the applicant's zeal for flying and his maturity stability and drive in the face of the hard ships and hazards of military aviation. The ARMA is not strictly limited to the applicant s purely mechanical ability to operate an aircraft In the case of officer applicants qualification as an Army aviator presupposes continued active duty with in creased responsibilities. In the case of enlisted applicants graduation carries with it promotion to the grade of warrant of ficer The qualifications of the applicant to accept and perform these additional responsibilities and duties must be considered as well as his aptitude to fly an aircraft.

The majority of applicants for flying training will be found to be qualified according to the ARMA It may provide the only reason for disqualification and in such cases it will be con sidered as valid as disqualification for any physical defect. The results of the ARMA are recorded on the Standard Form 88 (Report of Medical Examination) For recording purposes and stand ardization only the maximum score of 200 applies to the perfect" applicant Few will ever attain this score The exact score is arrived at by assigning variable numerical weights to certain derogatory indings then subtracting them from the maximum value of 900 A score of 160 or over qualifies the applicant for Army aviation training a score of less than 160 disqualifies him In scoring unfavorable findings the medical examiner is afforded considerable leeway in assessing specific numerical values

Table 1 contains suggested numerical values for representative unfavorable findings The smaller figure represents the minimum which should be subtracted if that particular condition exists and the larger figure is the maximum if that unfavorable finding exists to a marked degree The score of the applicant is entered in Item 72 of the Standard Form 88 Scores are recorded as Satisfactory ARMA or Unsatisfactory ARMA " followed by the numerical score If the applicant manifests two unfavorable conditions the score of which totals 40 he will be disqualified

as he cannot be assumed to be perfect in all other respects It is advisable, however, to complete the examination as the ARMA is an evaluation of the total personality, and subsequent findings may modify earlier opinions

TABLE 1 ARMA Suggested numerical values for unfavorable f nd ngs

Unfavorable findings	Numerical values
Nervous and mental disease in family (each instance)	0.5
Alcoholism in family (each instance)	0-5
Criminality in family (each instance)	0-5
Insomnia in applicant (persistent)	5 10
Hay fever asthma or other allergic phenomena	20-40
Enuresis (prolonged)	10-40
Somnambulism	20-40
Fainting (cause)	15-40
Unconsciousness (duration and cause)	10-40
Fracture of skull or severe concussion (See AR 40-110)	40
Phobias and obsessions (excessive fears)	5-40
Nail biting	10-20
Amnesia	20~40
Fits spasms and convulsions	20-40
Speech defects (corrected or uncorrected)	10-40
Arrests	10-40

The lss val 1 the minimum which hould be diducted fr mith maimum score of 200 fith dition is prisent this get val is the maimum to be ubtracted fith univorable addition; pre entro a mark diegre

Work sheets, when used in performing the ARMA, are not nor mally attached to the report of medical examination, but specific reasons for disqualification should be entered in Item 73 of the standard form In supporting a disqualifying ARMA, remarks which may be personally offensive to the applicant or remarks which may be controversial are not entered in the Standard Form 88 because the applicant receives a copy of all records proc essed Thus, a homosexual may be described as "arrested per sonality development," and an intellectually inferior person as "poor achievement" et cetera Most disqualifying ARMA's will be supported by physical evidences of instability such as a poor response to the orthostatic tolerance test. The medical examiner must exercise his judgment in assessing numerical values to conditions not listed in table 1 Evidence of marked vasomotor instability and other emotional phenomena, for example, will be given special unfavorable consideration

Inasmuch as the fiving applicant is being evaluated for a fairly specific vocation, it is mandator, that the medical examiner possess a sound basic knowledge of the specific stresses in volved in addition to basic qualifications in medicine and psychiatre, the examiner performing the ARMA should be familiar

with Army aviation its characteristics and its medical problems It is not necessary that the examiner be a pilot but it is necessary that he realize the general and specific stresses and re quirements inherent in Army aviation. Air Force experience indicates that the presence of wing insignia on the chest of the medical examiner, and all that it connotes is of value in establishing the rapport which is so essential to conducting the examination

STRESSES OF ARMY AVIATION

Inasmuch as the applicant is being examined for a fairly spe given to the general and special stresses of Army aviation it is accepted that man a terrestrial animal is subjected to certain unusual and additional stresses when piloting an aircraft. Full treatment of this subject is boyond the scope of this article Philosophically, the personality of a person contains an ego a function concerned with perceptions and their relationships to needs and the adaptability for creating situations. This ego? can be likened to a calculator which will fatigue or break down if (1) it receives too many strong stimuli too fast or (2) it receives too many varied stimuli and cannot cope with them Suffice it to say that in no other field are strong varied stimuli received any more rapidly than in military aviation

It is advantageous to compare the relative stresses of Army aviation with that of the United States Air Force While Army aviators do not normally fly at the extreme speeds and altitudes characteristic of the Air Force Army aviators fly all the time Complex navigational instruments are not normally provided in Army aircraft and frequently copilots are not available. The Army aviator is required to maintain continuous surveillance over his terrain his aircraft, and such instruments as are available. Fur ther in many cases the pilot has other concurrent responsibil ities such as caring for a severely wounded casualty, surveying or adjusting artillery fire observing friendly and enemy activ ities laying wire et cetera. The many missions of trmy aviation and the uncertainty and fluidity of combat in forward areas require frequent flights in all sorts of weather under variable tactical situations and with very little rest or inactivity be tween missions

Even between flights there is little abatement of stress On the completion of fatiguing missions Army aviators are required to live under conditions characteristic of the division area. They are not rotated to quieter areas on a basis of so many missions accomplished but on completion of a relatively long fixed tour. This lack of complete relaxation between sorties and the presence of cortain unavoundable deprivations further increases the psychologic stresses of flying.

ARMA TECHNIC

No rigid nor fixed rules can or should be prescribed for per formance of the ARMA Fach medical examiner has his own technic, and each applicant is an individual Applicants should be interviewed and examined in private A quiet room with comfortable surroundings permits the relaxation and intimacy so essential to secure the complete confidence and co-operation of the applicant Though material to be discussed during the interview is, by nature, confidential, it is not necessary that the examiner mention this, unless the applicant raises the issue Witting and note taking should be minimized, as applicants who believe that everything they say is being recorded are likely to avoid certain more intimate details. Tact is important, and questions should be asked indirectly. As an example, when attempting to find out if a man uses liquor it is better to ask, "How much liquor do you use?" rather than Do you ever take a drink?"

The ARMA should be performed after all other medical examinations and psychologic testings are completed it is the most time consuming of all prescribed procedures, and there is little reason to accomplish the test on an applicant who is already disqualified for other reasons. Furthermore the examiner per forming the ARMA should have access to all other information contained in previous examinations. Such information provides leads and confirmation which assist in conducting the ARMA.

The individual medical examiner should prepare a work sheet to be used in conducting and recording the ARMA. The very nature of the examination defies regimentation or over stand ardization but such a check list will ensure against omissions and point up more important considerations. The following gen eral fields of the personality should be investigated as the ARMA is being accomplished (1) family history, (2) environment, (3) morphology (4) intelligence, (5) achievement, (6) psychomotor activity, (7) emotional content (8) somatic demands, (9) sociability, and (10) philosophy of life Within this framework, the examiner can prepare a check list which most adequately serves his purpose

SUMMARY

Selection is the first logical step in the training of Army aviators. Among the more important considerations in the medical examination of applicants for Army aviation training is the "Adaptability Rating for Military Aeronautics" (ARMA). The ARMA permits an evaluation of the applicant's total personality as it relates to the specific stresses of Army aviation. It provides a basis for accurately predicting the probability of an applicant's completing the training for which he has applied, and his subsequent success in operational flying. The ARMA

is based on all facts obtained in the medical, psychiatric and psychologic histories the general physical neurologic and special examinations and various aptitude tests Special con sideration is given to the applicant a zeal for flying his maturity and his stability and drive in the face of hardship His aptitude of the additional nonflying responsibilities incumbent on an Army aviator is also evaluated General mention is made of the specific stresses of Army aviation and su gestions as to con ducting and scoring the ARMA are presented Proper performance of the ARMA will reduce the attrition during training and sub sequent operational flying promotes economy and improves flying safety

THE DIFFICULT PHYSICIAN

The phys cian who is intolerant of or p rsonally disturbed by emo tional interplay inadvert tly imposes great burde on his patients. He wrongly a sumes that everyone is possessed of an equal cap city for handling tens of and acts accord ally He i tactless unde the guise of being ho est ind direct. He sees little ne d fo the prep ation of p tients f disturbing n ws. He gives prognostic tion and diag noses to all patients ind scrimin tely f rgetting that o e m n s meat an ther s poison. His pre ence suppress s the free expression f feeling and when his patient unfortun tely yields to the temptat the phy ician lectures him on the benefits of maintaining stoical attitude He nveighs again t what he calls the patient's weakness by recounting in detail the much worse plight of other p tients

The opposite s rt is typified by the physic an who infantilizes hi patients By sugg stion and prescription he fost is their dependence Bed test vac tions and repeated admonitions to take it easy are ordered p r n Hormones vitamins and tonics are the agents with which he implem its the bold suggestion that the patient's end cri nologic tides his diet or his en rgy reserves are somehow or other deficient and eed to be supplemented periodically

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A FIELD SERVICE PROGRAM IN MILITARY MENTAL HYGIENE

CLAY F BARRITT Captain MC, USA RICHARD P KERN First L eutenant, MSC USA

THE USEFULNESS of a mental hygiene consultation service in a basic training center largely depends on the working relationship and availability of psychiatric personnel to the various unit officers and cadre. This report summarizes the experiences of the staff of the consultation service at a medical training center as they attempted to develop this relationship and increase the availability of consultations.

Prior to the introduction of a Field Service Program, the mental hygiene consultation service was operating in a manner similar to that of other consultation services in basic training centers At Camp Pickett, Va, it was located with the training units in a cantonment type of building It was adequately staffed with three psychiatrists, a social work officer, a clinical psychologist and several psychiatric social work and psychology technicians. Ad justment problems occurring among basic trainees were referred by company commanders, dispensary physicians, chaplains, and Red Cross personnel Social histories, collateral information, psychiatric interviews, and, when necessary, psychologic testing were completed A superficial and supportive approach was used in treating those soldiers who could continue their basic training Trainees unable to cope with the stresses of Army life were hos pitalized when necessary or recommended for separation from the service under appropriate administrative regulations

After the staff had worked together for several months many deficiencies, particularly in the field of preventive psychiatry, became noticeable. For the most part only those persons who were severely disturbed or who presented marked adjustment problems were referred to the consultation service. By this time motivation for further duty was at a low ebb. The delay in the referral of persons with correctible maladjustments rendered some of them unsuitable for rehabilitation in the Army.

Deficiencies were also noted in the operating procedure within the consultation service itself. Trainees referred to the consultation.

From B coke Army Med cal Ce ter Fort Sam Houston T x. Dr. B mitt s now t Ch st t Lodge Se ta um Rockvill Md.

tation service were taken from their unit settings and treated in a clinical atmosphere. This setting tended to produce an artificial environment which obstructed proper readjustment of the trainee. While efforts were made to reduce this factor by eliminating medical attire and using the title. Consultation Service a psychiatrical attire and using the title. Consultation Service a poston atrist is still a doctor to trainees. With certain trainees whose adjustment largely depends upon firm but understanding leadership referral to a medical facility will encourage sufficient secondary gain to complicate effective management. Psychiatric evaluations and recommendations to company commanders reflected a lack of awareness of important problems present within these field units. Clearly it was necessary to direct efforts toward providing the company cadre with a better understanding of the trainee so they could apply more firm understanding leadership.

An early effort to correct these inadequacies was the assignment of a psychiatrist to each training regiment. While this helped the need to direct more intensive efforts toward the training companies became evident. To meet this need, the present project referred to as the Field Service Program was suggested to the commanding general of the medical training center. This project consisted of assigning social work technicians (referred to as unit field workers) from the consultation service to various training units in the medical replacement training center.

PURPOSE OF THE PROJECT

The purpose of the project was to observe the effect of greater availability of psychiatric personnel to units in training. The major objectives of this project were as follows

- 1 The orient tion of unit c dre to psychiatric s rvice in the training center and the resolution of their personal resistances to these services
- 2 Th education of unit cadre in the recognition of adju tment problems among trainees
- 3 The early detect on of adjustment problems among trainees and when necessary the r referral to the mental hygiene consultation service
- 4 The detect on of adjustment problems occurring among trainees not usually referred by unit cadre to the consult tion service
- 5 The man gement of adjustment problems among trainees within the training unit by the unit field workers
- 6 The understanding of problems due to the training process and affecting adjustment to b six training

ADMINISTRATIVE METHOD

The project was placed in operation in the Medical Replacement Training Center Camp Pickett Va in January 1954 At that time both infantry basic training (first eight weeks) and medical basic training (second eight weeks) were being conducted Early observations indicated that a company was too small a unit to require the full time services of a unit field worker A training battalion (four companies) was finally selected as representing the most appropriate strength to be served by each unit field worker In February 1954 the Medical Replacement Training Center was transferred to this medical center, with many of the cadre personnel, including the staff of the consultation service With a smaller trainee strength and the elimination of the first eightweek cycle of infantry basic training, only three unit field workers were required One worker was attached to each of the three train ing battalions One of these men also worked with two special training companies which provided infantry basic training for conscientious objectors It was proposed to gather observations during two training cycles (eight weeks each) before a summary evaluation of the project was made

The unit field workers were attached to the various battalions for quarters and rations. Each had a cadre room supplied with a desk and two chairs in one of the companies for the purpose of interviewing. The assignment of these workers and their duty hours with the units was determined by the chief of the consultation service to whom they were directly responsible.

The field workers lived in the battalion enlisted quarters. They were expected to conform with battalion standing operating procedure on such matters as reveille, mess, and uniform regulations. They were, above all, not to be conspicuous as privileged per sons.

Referrals were made to the unit field worker through the company commander Each man referred from a company was interviewed by the unit field worker, who recorded the initial history. The unit field worker served as a screening agent, and referred to the consultation service only those persons who needed a more thorough evaluation. Those persons not referred to the consultation service were observed in training, and appropriate recommendations were made to the company commander and enlisted cadre for their management.

Records of the Unit Field Worker After the unit field worker completed the initial histor, on each person referred to him, it was read by the chief of the consultation service, who in this way supervised the management of all referrals It then became a permanent part of the consultation service records

Collateral information and progress notes on trainees were recorded, submitted, and filed with the consultation service

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their poor adjustment been noted earlier and their referral been made promptly Several changes occurred after the project was initiated which undoubtedly have influenced this problem. This medical training center receives trainees who have completed their first eight weeks of infantry basic training Thus some screening had already been done Furthermore trainees here are under observation for at most eight weeks Many trainees stay for only two weeks of training after which they are assigned elsewhere Present observations indicate that no essential change occurred in the area of early detection of adjustment problems It is the cadre who carry the main responsibility for the detection of adjustment problems. Though the idea that the worker could identify trainees who should be referred by watching them in classes et cetera seemed promising it has not proved to be of tractical importance In practice this requires a closer knowledge of the trainees than a unit field worker can possibly attain To carry out such a plan would require more workers and would interfere with the platoon sergeant's position and responsibilities toward the trainees The emphasis therefore was shifted to the unit field worker helping the platoon sergeant perform his func tions more effectively

Screening of Referrals About 138 trainees with adjustment problems were referred to the unit field workers. One third of these troops were managed by the unit field worker in the training unit under the supervision of the chief of the consultation service The other two thirds were sent to the consultation service. This preliminary screening permitted the clinic staff additional time in the evaluation of the more severe problems

TYPES OF ADJUSTMENT PROBLEMS

Though the main responsibility for the detection of adjustment problems among trainees rested on the cadre the presence of a unit field worker in the training unit did stimulate earlier referral as well as referral of trainees who otherwise might not have been referred Prior to the field service program many cadre men regarded the referral of trainees to the mental hygiene consultation service as a last ditch measure Company cadre often desire immediate and concrete recommendations from psychiatrists following their referral of a problem trainee with the conventional clinic operating procedure it was not unusual for a week or more to elapse before a company commander received a psychiatrist s report when the monthly case load varied between 100 and 200 Frequently this report was of little help to the company com mander Furthermore these recommendations did not always reach the enlisted cadre who were intimately concerned with the man agement of the trainee Thus resistances to the referral of train ees resulted not only from the social stigma but also the failure

of the consultation service to offer prompt and practical aid to company cadre

The presence of the unit field worker enabled him to deal more successfully with both of these issues. As he gained a better understanding of company policies and developed a working relationship with company cadre he became more useful to the unit. He was often able to give concrete suggestions concerning the management of a trainee Men with minor types of adjustment problems were referred more readily Such referrals included men who apparently were not profiting from training, men applying for hardship discharges, men observed to exhibit unusual anxiety when faced by persons in authority, and men who were incipient disciplinary problems

MANAGEMENT OF ADJUSTMENT PROBLEMS

The opportunity for the unit field worker to interpret the be havior of a trainee to a cadre man and give suggestions in the management of the adjustment problems is regarded as his most important contribution to the management of men within the unit. This point represents a shift of emphasis comparable to that discussed in connection with detection of adjustment problems. In other words, although the treatment of the individual trainee is important, the worker's role of technical advisor to the individual cadre man who deals with many trainees appears more promising

UNDERSTANDING OF ADJUSTMENT PROBLEMS

Through frequent contacts with unit cadre the unit field worker acquired a more realistic understanding of unit problems. This orientation was primarily useful in evaluating and managing ad justment problems among trainees and in overcoming the pe sonal resistances of cadre men

REACTIONS OF UNIT CADRE

The following data concerns the responses to a questionnaire from the company commanders, first sergeants, operation ser geants, and platoon sergeants because they were in closest command contact with the trainees These groups formed a combined group of 79 men, collectively referred to as the leadership cadre

The first item of interest was the extent to which the leader ship cadre's responses reflected both an awareness of the unit field worker s presence and a basic, if limited, understanding of his function in the unit Sixty one percent of the leadership cadre indicated an awareness of these two points Two factors—distribution of contacts and number of companies per unit field worker—appeared to be primarily responsible for the lack of awareness among some personnel Wany platoon and operation sergeants were aware of the workers presence but had not yet become familiar

with his functions Relatively little time however, had as yet been spent with the individual platoon and operation sergeants.

The responses also revealed that one worker had been assigned too many companies a total of six As a consequence 56 percent of the leadership cadre in four of these companies were not even aware of his presence The other two workers were assigned only four companies each, and in each case only 10 percent of the cadre were unaware of the presence of their respective unit field workers

Further comments on other aspects of the program were made by those cadre men who were fully aware of the program (program oriented group) It is interesting to contrast their responses with those of the unsatisfactorily oriented cadre (nonprogram oriented (quors

Need for Unit Field Worker Among the program oriented group 94 percent indicated a need for a unit field worker and 75 percent reported that the worker had been of assistance to them in manag ing problem trainees These figures compare with 48 percent and 33 percent respectively in the group not program oriented

Educative Role of Unit Field Worker It was thought by the staff of the consultation service that the cadre men s reasons for referring some of the trainees (in effect psychiatric screening) reflected rather vague ideas of what constituted an adjustment problem Consequently the orientation of cadre was an anticipated by product of the field service program Sixty five percent of the program-oriented group as compared to only 39 percent of the group not program oriented believed they had learned to recognize adjustment problems better as a result of the worker s presence However 77 percent of the program oriented group denied that their ideas concerning the types of problems to be referred to the unit field worker had changed. Slightly over one half of the group not program oriented indicated no opinion" in this respect. It would appear then that the program oriented group saw no need for a change in its referral policy. Any change which might take place would be in terms of more discriminating detection and prompter referral of men with the similar types of adjustment problems as formerly It was also noteworthy that the increase in symptom sophistication among the program oriented group tended to be reported by the field cadre (72 percent) rather than by the commanding officers and first sergeants (53 percent)

Confidence in Unit Field Worker Among the program oriented group 56 percent indicated confidence in the worker's ability to avoid the pitfall of allowing trainees to pull the wool over his eves This particular phraseology was chosen because it was frequently used by those cadre men who showed considerable resistance to psychiatric services and/or the unit field worker Twenty seven percent of the program oriented group indicated ambivalence on this question. The comparable figures for the group not program oriented were 26 percent and 35 percent respectively.

COMMENTS

It was unanimously agreed that field contacts made by psy chiatric social work technicians were invaluable Perhaps some psychiatric social work technicians would be initially repelled by the prospect of activities which may appear to offer little personal gain for a large expenditure of time While such feelings were present at the initiation of the program it is now difficult for the social work technicians who participated to understand how they were ever satisfied with their previous role in the clinic setting Perhaps many psychiatric social work supervisors and psychiatrists will see in this program a decentralization of super vision and a subsequent loss of control over their personnel In operation, however, the supervision of the field workers by the chief of the consultation service presented no unique problems The basis for supervisory activities which exists in the con ventional clinic setting was present in an identical form during the operation of this program. The necessary qualifications for a unit field worker are no different from those for any proficient social work technician Each of the men used in the program was a capable technician, enthusiastic about succeeding in his new role, conscientious in the performance of his duties, and willing to accept his limitations He was given ample opportunity to dis cuss with the field psychiatrist and other staff members of the consultation service any professional and interpersonal problems arising within the units A unit field worker was never forced to accept responsibilities which he and the field psychiatrist thought he could not handle

Initially, unit commands may think that such a program is an attempt to cut into their authoritative role over trainees. That this attitude can be managed with a reasonable degree of success in a relatively short period of time has been indicated.

Reservations such as those mentioned above are in some re spects healthy ones because the role of the unit field worker is a new one and experience has not been sufficient to completely evaluate it However, the role appears to offer to consultation services an opportunity to increase the usefulness as well as the quality of their social work Conventional areas of function mag, such as the gathering of collateral information and the referral of men for re evaluation of psychiatric profiles, are carried out with greatly increased efficiency. The improvement in the scope and general quality of the collateral information itself is sufficient to justify the unit field worker's role.

It has been our experience that to obtain adequate information concerning a trainee's behavior and to realistically evaluate it once it is obtained, the clinic cannot function with the detachment of a hospital outpatient service. Rather it must function more as an integral part of the organization which it serves. The further removed clinic personnel are, due to administrative consider ations the less is the possibility of establishing effective relationships with unit command. If unit cadre harbor prejudices and misconceptions concerning psychiatric services these re sistances cannot be adequately managed through periodic lectures sporadic telephone conversations or occasional informal talks. It is our conviction that the concept of military social work as field work must be developed. Only then can a consultation service work more effectively with the command in carrying out the preventive functions of its over all mission as well as treatment and disposition.

SUMMARY

The purpose of developing a psychiatric field sorvice program conducted by the mental hygiene consultation service was to make the services of psychiatric personnel more readily available to unit command and to bring about increased understanding concerning the roper use of these services. The essential feature of this method consisted of attaching a social work technician referred to as a unit field worker to each training battalion. Those unit field workers under the supervision of the chief of the consultation service worked directly with the training companies in their respective battalions.

The impressions of the unit field workers concerning six areas of previously deficient functioning were summarized from their daily logs A questionnaire administered at the end of the trial period provided some indication of the unit cadre s reactions to the program The major advantages offered by this program con sisted of (1) Establishment of a closer working relationship with all levels of command and particularly the company cadre (2) marked improvement in collateral information on men referred to the service (3) more realistic psychiatric is ommendations through increased acquaintanceship with unit problems and unit person nel and (4) a more effective program of preventive psychiatry by making it possible to assist unit cadre in managing within the unit trainees exhibiting the less severe or potential maladjustment problems By this means it was believed that the necessity for later, more involved psychiatric treatment tended to be obvisted

THE BABYLONIAN CADUCEUS

FIELDING H GARRISON Lieutenant Colonel MC USA

N THE title pages of books published by one of the great medical printers of the great the content of the great through the content of the great through the content of the great through the content of the great through the content of the great through the content of the great through the content of the great through the content of the great through the content of the great through the content of the great through the great (1460 1527) of Basel, we frequently see a device which the uniform of our Medical Corps has rendered familiar, namely, the caduceus with the entwined sements In the case of Froben's device, the caduceus is not winged but surmounted by a dove. and, in the complete emblem, there was a Greel inscription which read Be ve therefore wise as sements and harmless as doves " This is perhaps the first instance in which the kerykeion or cadu ceus of Mercury is associated with medicine. Just a little later, Sir William Butts (1545), physician to Henry VIII, was the first medical man to employ the caduceus in his crest." About the middle of the nineteenth century (1844), another firm of medical publishers. J S M Churchill of London, began to employ the caduceus on its title pages A little later in 1856, the caduceus appears on the chevrons of hospital stewards in the U.S. Army For a long period it has been part of the insigma of officers of the Public Health Service It is not until 1902 that it is first seen on the uniforms of medical officers of the U S Army 2 As the Hermes of Greek mythology was variously the god of fertility. the messenger of the gods, the conductor of souls to Hades, the god of commerce, merchants, and thieves it has been sometimes argued that the symbolism of the caduceus is not strictly medi cal and that it should be replaced by the Aesculapian staff with a single serpent which is, in effect, the collar ornament of the Royal Army Medical Comps But recent investigations on the pre-history of the caduceus by A L Frothingham indicate that

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it had its origins in civilizations much earlier than the Greek

and that in the first instance it symbolized certain vague grouns of mystic or magic processes which in the cult of prehistoric man were anterior to medicine in our sense but certainly in clusive of it



C duc us on a B bylon vase (4000-3000 B C)

Archaeologists have found that Hermes was originally a pre-Olympian deity of Babylonian extraction and that this proto I ermes was invariably a snake-god who as the deity of springtime and of fertility appeared in the guise of a double snake male and female Now in the most ancient cults the snake was always the symbol not merely of medicine but also of those mystic and magic processes which included it and of which the power of conferring fertility potency or fecundity was one of the most aweinspiring In the earlier Babylonian and Hittite figurations the caduceus is not an emblem but a god in itself in others it is carned in the hand of gods or goddesses as a sign and symbol of supernatural power



Clinicopathologic Conference

U S. Air Force Hospital Parks Air Force Base Calif *

MASS IN THE CHEST

Summary of Clinical History A 24 year old man was admitted to the hospital on 4 May 1954 because a roentgenogram of the chest taken on separation from the service showed a mass posteriorly in the base of the right hemithorax. The patient had been completely asymptomatic. He had been in the Air Force for two and one half years and had been stationed in Texas and horea. His home was in Texas. His past history was unrevealing except for measles while in the service and an episode of "flu" lasting seven days while in Texas, four years prior to admission.

Physical Examination The patient was a well developed, well nourished, white man in no distress Blood pressure was 110/70 mm Hg, and findings of the remainder of the examination were within normal limits

Leboratory Studies The white blood cell count was 11,050 per cu mm with 61 percent neutrophils and 39 percent lymphocytes Hemoglobin was 14 5 grams per 100 ml Erythrocyte sedimentation rate was 18 mm per hr (Wintrobe) and hematocrit was 48 Uri nalysis showed an acid reaction, specific gravity of 1020, no albumin or sugar, and a normal urinary sediment.

Course in Hospitel The skin test for histoplasmosis was positive and the tuberculin (intermediate PPD) and coccidioidin (1 10) skin tests were negative Complement fixation tests were negative for histoplasmosis, blastomycosis, and coccidioidomycosis, and the agglutination test was negative for histoplasmosis Pos teroanterior and lateral roentgenograms of the chest showed a peculiar rounded density at the base of the right lung, far posteriorly, in the paravertebral position. This shadow was concealed by the diaphragm and presented no distinguishing characteristics. There were coarse bronchovascular markings in the

Col Fra k H Lan USAF (MC) Command r Fr m th Laboratory Service Capt D 1 G Johnston USAF (MC) Chi f

right lower lobe and several small nodules above the diaphragm There also were slight pectus excavatus minimal end plate it regularity and flattening of the middorsal vertebral bodies

Additional roentgenograms showed that there were three dis crete nodular masses at the base of the right lung The largest of these lay in the posterior costophrenic sulcus in the para vertebral position It was about 5 cm in diameter and contained tiny calcifications which were invisible on the routine chest roentgenograms but were clearly seen on several abdominal films The smaller ones were spherical about 2.5 cm in diameter and of uniform density In the adjacent lung parenchyma there were scattered calcification and fibrotic stranding Planigrams were done in the frontal and sagittal planes through the lesion but they did not add further information

The patient was presented to the chest conference and it was decided that bronchoscopy and exploratory thoracotomy should be performed Bronchoscopy was omitted On 25 May 1954 the right thorax was explored The patient did well except for the development of a temporary postoperative pneumothorax which disappeared spontaneously On 23 July the patient went on con valescent leave for 30 days and on his return chest films showed no remaining air in the right side of the thorax and only the usual postoperative changes in the right base. The patient was dis charged to duty

DISCUSSION

B cause the case is to b pr sented in the U S Armed Forces Med cal Journal and because it was picked out as a discussion for my maiden trial as a consultant here I would be quite pos tive th t any relationship between my diagnosis and what the pa tient actually h is going to be purely concidental however these exercises are always fun and in many ways very instructive You can always take a case like this and hang a little story on it which may help all of us even though I and perhaps even the surgeons before operation d'd not make the correct diagnosis

There are several things that interested me as I read thr ugh this protocol First th re is no mention made of a chest film at inducti n and I bring that up because if there had been one and if it had been reported as neg tive perhap it would throw a little different light on what we are dealing with when contrasted with the poss bility th t no induction film was mad. If the l tter i the case we are merely presented with a static s tuation in t knowing how long the shadow in the chest has pers sted I am not well enough equainted with Texas (the pat ent s home state) to know whether any esot ric d seases develop down there By the same token I do n t know what one might

D Pa I Samson A ocus Clunical P f or f Surg y Sta ford U PI Al Calf

pick up in Korea or whether this may be something we might expect in civilian life as well as in military life

The past history does not seem to bring up anything startling. I know of no connection between measles and shadows in the chest. The physical examination as you might imagine is also completely inconclusive. One might point out that either a low grade inflammation or a tumor could give some elevation in the leukocyte count and in the sedimentation rate. The differential count does not show anything that would give us a lead. Now let us consider the complement fix ations and skin tests. Everything was negative as far as the complement fixation was concerned. We did however have a skin test positive for histoplasmosis only the PPD and the coccidioidin tests both being negative.

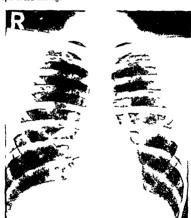
Of course we get down to the kernel of this thing when we start to discuss the xrays As I read this over I would like to read the findings for emphasis. "A peculiar rounded density at the base of the right lung far posteriorly in the paravertebral position. This shadow was partially concealed by the diaphragm and apart from the presence of coarse bronchovascular markings in the right lower lobe there were no other characteristics. There were also two or three smaller nodules above the diaphragm. The first question in such a situation is whether or not we can say with any assurance that this mass is in the lung in the mediastinum or in the chest wall and I don't think that we can tell from the description which area we are dealing with Perhaps if I look at the xrays I can titll either.

Doctor Ha son In the posteroanterior chest film (fig 1) you can see the arrow pointing to several discrete nodules containing calcification and on the film taken after pneumoperitoneum was induced there is no subdiaphragmatic element. On the lateral view the lesion is far posterior

Doctor Sam on I think it would be interesting to point out and I asked the x ray staff before the conference started whether or not the larger lower shadow (which is quite obvious to us now) was actually seen on the chest film prior to the time that the shadow was brought out on a Bucky film of the abdomen (fig 2) I am quite sure that I could miss it easily My attention would be drawn to the two or three small nodular shadows above the level of the diaphragm and I think you could miss the lower one partially obscured by abdominal organs. On the other hand when you see a heavy film the shadow is so very obvious that you go back to the chest film and say. Of course its there "You take ordinary frontal and lateral films and you look at them very carefully. If you are luck) you will have your attention drawn to something like this and then of course the other studies that are of great importance are shown here. Bucky or rib detail films with or without the induction of pneumothorax or pneumoperitoneum help us

May Rus 11 C Harrison USAF (MC) Ch fof R d of gy

outline this type of lesion I still am not sure whether the sh dow is actually under the disphragm or over the disphragm and nobody has told me Perhaps I m not supposed to know but in this particular posteroanterior view it seems very definitely to be und if the diaphragm Do we have a lateral film at the time pneumoperiton um was present? That probably would give us the answer to whether the lower shadow has anything to do with the others. I m not at all sure we do not have a couple of red bettings.



F gur 1 Po te ou t for vi w f the chest

Here is the situation then there are several nodules or viving size let s say two of these which might very well be in the lung paren chyma and third much larger sh d with I tile scatt red areas of calcification that may or may not be within the lung or may or may not be within the trace cavity if you use the diphragm is the houndary of the chist.

D : H i A I te all v w at the time pneum peritoneum wa induced is not a ailable b t the de cr pt on of the x-ray report is th t these nodules were all supr disaphr gm te. Doctor Someon Supradiaphragmatic? That's nice to know I m not sure it helps us any

Doctor Harrison We also have posteroanterior and lateral planigrams (fig. 3) I think you can see the very large shadow with two rather smaller shadows and linear shadows extending in the direction of the



Figure 2 Posteroanterior roenigenogram of abdomen made during the gast ointestinal selves Arrows outline large round mass containing flecks of calcium.

diaphragm with dense stippling. This might suggest to you a gran ulomatous lesion undergoing calcification and associated with paten chyral scarring

D ctor S m on The thing that bothers me about the lower shadow is that it looks spherical on all the posteroanteric views that we see but not on the lateral films. This is the problem. One can indulge in flights of fancy as to what these shadows might be I think we can first talk about other possible diagnostic steps. I notice that bronchos

copy was advised. My only comment on that would be that I would think that broncho copy had little chance of showing anything in this particular situation Had I explored this particular patient I would have done a bronchoscopy but I would have done it as merely incident to the thoracotomy after induction but before n intratracheal tube was inserted.



Figur 3 Late al pla foram 1th right ide of the che t

The treaking in the card ophrenic angle mu t make one su p ciou of some chronic inflammato y change in the lung entirely asid from these nodules. One wo d is ther fore if this may be a bronchiect sis and f a bronchogram may not be advisable. Then at operation one can go n and under certain circumstances enucleate the nodules from normal lung to ue But if those nodules h ppen to be part and parcel of a bronchiectasi e en though t is asymptomatic one would be bette advised ure cally to take the entire lobe out A bronchogram was not d ne and I m not o sure that I would have done t either be cause of the fact that thi boy h d no h st y of any type of chr nic cough or repeat d colds or nything else th t would lead you to be lieve that h should have brouchiect sis

I don't see anything in this cale that would particularly in he me wender about an arterioveno s fistul. The shidow of an arteriovenous fi tula are prote n We do know that some p tients have no symptoms whatsoever particularly if the fistula is small and single Other patients have cyanosis dyspaea clubbing and polycythemia It should be remembered that when an arteriovenous fistula is in the lung the heart is usually of normal size or is enlarged very little whereas a peripheral arteriovenous fistula if it is symptomatic at all is always associated with some enlargement of the heart. I mention arteriovenous fistula merely in passing If one did consider it the best thing to do would be an angiocardiogram with particular attention to getting a number of spot films to determine whether or not there was an abnormal filling of the left side of the heart associated with opacification of these shadows

That leads us up to the point of performing an exploratory operation What are the reasons for doing this? The main reason is the knowledge that we cannot be sure that any lesion we have seen is not a malignant lesion If you read the literature you will realize that the percentage of malignancy varies considerably depending on the selectivity of the patients that are being studied. About a year ago Storey and associ ates' reviewed from 10 reports about 400 operated cases of so called coin lesions (which is what we are talking about here) and in that over all group 30 percent were malignant. But the percentage varied from about 17 percent in an article by Effler and associates2 (which dealt primarily with young military men in wattime situation) to 55 per cent found in general thoracic practice (Davis and klepser) So one can say that on the average about 25 percent of these lesions are likely to prove malignant if you take them from all situations in prac tice young old males females et cetera If you took them all at this hospital the percentage of malignancy would be much less because I think probably the bulk of your patients are young military personnel

Secondly if these lesions are not carcinomas of some kind either metastatic or primary then they most frequently fall into that great group of granulomas. I use the word granuloma because we know very well as we have more experience that many of these lesions are not tuberculomas. Many that were called tuberculous in the past are not Some of them are due to histoplasmosis Some of them, especially on the West Coast are due to coccidioidal infection and perhaps some to blastomycosis There apparently is scattered calcification in or around these nodules and we are frequently asked "doesn't that mean that we are never dealing with a malignancy? The answer of course is that even in patients with calcification malignancy is not completely ruled our You can either have a coincidental carcinoma which actually is not a pathologic rarity or there can be a little calcification in a malignancy Therefore we have not completely ruled out malig nancy in this patient. The fact that three nodules are present is against this disease being a neoplasm and is in favor of some type of granu loma My preoperative impression would be that these masses in the lung are probably granulomas of some kind I cannot get any closer and it is up to the pathology department to do the proper tests to tell

if it is tuberculosis blastomycosis coccdioidomycosis histoplas mosis or what not

The lower shadow still bothers me and I can t explain it I thought about it as I was talking here and hoped that I would get a special leer from someone that would give me a lead as to what this might be but everybody sits there leering right back at me so I don't know I think the thing that bothers me about it is that I c n see it so well in the postero netrior projection and I can t see it in the lateral film If you tell me it presumably s above the diphragm then I still have trouble because I can t see above the diphragm too well on any of these lateral films In that postion you can have all sorts of possible less ons which might or might not connect with these nodules in the lung It could be a vascular shadow certainly I was assured that thad nothing to do with the esophagus.

On the other hand it could be what is called an enteric cyst some of which ar actually attached to the esophagus and some of which are not and again I don't know any wy of telling any more about it than that I think I II just have to pass that by saying that I am worried about the di gnosi and particularly worried as to whether there are two separ te entities or whether they are all tied up together I think that certainly I would explore this boy and be prepared Id hope to de I with whatever I found Of course from a low posterior anter ch in a situation like thi one is able to go above or below the diaph gm with equal facility If there i m ss immed ately below the diaphr am and posteriorly one thinks of course of possibly kidney and adrenal le ions but th se are very easily approached through the diaphragm Actually it would be the best appro ch to the k dney and particularly to the adrenal The drenal is clo er to the surface through the draphragm and tenth r b poster orly than any other place. That s the quickest way to get the adrenal out

There is one more important point I would like to emphasize before I close this discussion and that is we do not do extensive lung to section until we have an undoubted diagnosis under the microscope I think all chest surgeons who are worthy of their salt know that today I don't hy to tell Doctor Bergmann or Doctor Breckler about that because they know it. On the other hand, there are a number of people doing chest oper tions rather casually who technically may be able to do a good lobectomy but they too must remember that they cannot go in with a pesumed diagnosis of cancer of the lung take out the lung and find a infarct or foreign body or something else Actually I m just me tioning instances that I know recently ha e happened It is our unvarying rule that unless we have an undoubted diagnosis under the microscope we resect the smalle t amount of lung poss ble until we know what we are dealing with I think it is ctually very had practice these days to operate on the assumption that one is deal ing with a care noma do a pneumonectomy and then find out the pneumonectomy was not necess ry There are not a few people who have

succumbed because of that and there are not a few more who are pul monary cripples instead of having had a curative operation

Doctor Johnston There are thoracic surgeons in the audience and I would like to stimulate some discussion Doctor Hoffman?

Doctor Hoffmon This is a real problem. Although the man does not have bronchorthea the possibility of pulmonary adenomatosis might be considered He is a young fellow but this is a possibility In the paravertebral gutter neurofibroms are possibilities

Doctor Johnston Doctor Breckler?

Doctor Breckle I m going to stick my neck way out I ll very briefly eliminate neoplasm on the basis of the patient's age and eliminate granuloma for two reasons I think that granulomatous lesions are so common that we wouldn't be seeing one in a clinicopathologic con ference and second of all it is rather an unusual thing to see a configuration of three granulomas of this size in the position that they are in although I am sure they can exist So I am going to advance a new diagnosis I think that these are cystic structures and I think that because they are not filled with air or show any evidence of a fluid level we can assume therefore that they are not connected to a bronchus Therefore one must hypothesize that they are cystic masses pinched off at some time in the embryologic development of the lung In this position the most logical thing to me at least would be a so called sequestration of the lung in which for some embryologic reason the bronchi lose their communication with the lung substance and nothing is left but a group of cystic structures which become filled with fluid and which incidentally have as a blood supply arterial branches directly from the aorta. So because of the position because of the patient's age and because of the fact that these are spherical densities. I am going to call this a sequestration

Doctor Johnston Thank you Are there any other comments?

Doct Steggall

What about the induction film?

D ct r Weiss

We have no information about it Dr. Samson's diagnosis

Dr Samson's diagnosis Granuloma of lung

Docto J haston Are there any other questions or comments?

Doctor Bergmann, you were one of the surgeons on the case Would you describe what you found at operation?

Doeto B gmonne I might say that we did not make a diagnosis on the case preoperatively. At operation we found dense adhesions

Capt Milio C. H fiman USAF (MC) As ista t Chi f O thoped c Servi e Capt. Irvi g A B ckl r USAF (MC) As sta t Chief Thor cic Surgery

Capt. CI of St ggall USAF (MC) Chi f Orthopedic Service.
Capt. V lliam Veiss USAF (MC) Chi f Pulmonary Dise se Service.

Cap Ma tin Bergmann USAF (MC) Ch of Thorac c Surg ry

surrounding the lower lobe and when these were severed there was a cystic structure deep in the posterior sulcus which was about 5 cm in diameter It was thin walled and appeared to have no connection with the remainder of the lower lobe. This cyst was removed by sharp dissection without coming across any grossly appreciable blood supply After we h d done that we thought maybe we could let it go at that in line with what Doctor Samson said about conservation of pulmonary tissue but w could feel the discrete masses plus much more surrounding induration in the lower lobe than the film would lead one to be lieve We decided that we could not do an enucleation or local re section and that a lobectomy was the only procedure that was feasible This was accordingly done In the course of the lobectomy as the inferior pulmonary ligament was divided a large aftery was encountered and ligated

Doctor Samson would you like to comment before the pathologic demonstration?

D to S m We have run into abnormal blood supply several times before it was ever described a sequestration always in a situation where there was obvious infection or cystic dise se I have never seen it actually in this sort of a business where the cysts were closed off We have I think six t mes run into an anomalous blood vessel a couple of times unexpectedly but always in a situation where we operated for chronic suppur tion of the lung When the lobe was our we found each time there was cystic diseas quite obviously con genital with econdary infection. The reason these patients were oper ted upon as adults is that somewhere along the line they devel oped infection n the cist nd once they de elop infection in a cystic structure or cystic bronchi ctasis they never quite get rid of it Antibiotics will knock it down but it will keep goi g unt I such time as the less n is removed While I have read of it this prisent case i n w in my personal aperience and I am not surprised that you took out two les ons because it looks like two sh dows on the x ray I think it is alw ys difficult to say that there are tw sorts f situations a d I pre sume the lower mass was a pleural affair completely separate from the lung if I and rerood you

No we could not be sure

Was it a cyst?

It was a cyst c I sion and we did not know whether we were following an anatomic line in its removal

You took th t out before you did the lobectomy?

D + B gm n Yes It was adherent to the l ng

Well it i hard to say and I think th t from the plani gram you would suspect some sort of a chronic inflammatory disease This sort of streaking usually means increased f brous tissu in the lung It is new in my experience that you would have an abnormal blood supply with sequestration as it has been called in the face of closed off cysts. Those of you who have never cut across one of those anomalous vessels without knowing it until after it is cut have an experience waiting for you

PATHOLOGIC DISCUSSION

Doctor Johnston Are there any other comments? The pathologic diag nosis rests with bronchopulmonary sequestration. This was a new entity to me also and we have prepared a biref pathologic demonstration of this disease. I found that Doctor Bergmann has a couple of cases that he is preparing for publication so I would like to ask him to describe the entity birefly and show us a few illustrations of his cases.

Doctor Bergmann In the present case after we removed the specimen we did injection studies using lipiodol through the aberrant vessel and through the so-called normal pulmonary vessels. Then we took x rays of the specimen These are of some interest. In the first, you can faint ly see the lipiodol in the aberrant vessel and the calcifications (fig. 4). Of course the large separate cyst is gone and no longer connected to this specimen. You see the anomalous vessel which supplies the lower part of this lobe. With more dye injected through this vessel (fig. 5), we visualized one of the branches or tributaries of the inferior pulmonary vein. This vein was identified as such at the time of operation and it filled to our surprise on this film.

I have seen two similar cases previously at the lewish Hospital in St Louis One was a case report we found in our autopsy files The other was of a 15-year-old boy who had a cyst with an air fluid level and who was operated on because of the cyst. In that patient there were no less than six anomalous vessels entering the lung. In the autopsied patient there were two anomalous vessels. We have gone over the literature and have not found from previous records any instance of more than one anomalous vessel entering the lower lobe. This has practical importance because it is quite easy to find vourself face to face with one of these vessels tie it and then with out expecting to find others come up against a few more. The other thing that was interesting about these cases is that the autopsy case in which the lesion was an incidental finding was one of a bronchial adenoma in the wall of a large cyst. This would perhaps not be unexpected to people like Doctor Evans Graham who for years have talked about the coexistence of congenital anomalies and certain lung tumors

Our special interest in these cases however was in the double blood supply Pryce and others have previously described the devel opment our of proportion to the patients age of arteriosclerosis in the anomalous vessel In these patients however we found that there was no marked arteriosclerosis in the anomalous vessel but that the sections of the pulmonary artery showed arteriosclerotic changes out



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F gure 4 Roe tge gram f t d ight low lob howing lipted l i f item the ugh the ab m nt s l Figure 5 S me a figur 4 after i letio of mor liptedol N t i wall d i f or p limona y v n.

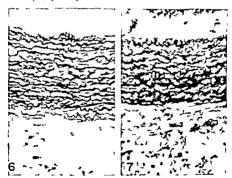


Figure 6. Elastic tai of wall f berna tatery Tb w lli of gre ter tbickness and outsins mor latic fibril than doe a ormal pulmona y tery Figur 7 Eld tic tai f wall f normal p Imonary a tery M g ific tion is the sam as that i figu 6.

of all proportion to the age of the patient. The pulmonary vessels in the 15 year old boy had more arteriosclerosis than you would see in a 70 year-old person. As you know the pulmonary arteries are relatively immune to degenerative changes. In the autopsied patient, the arteriosclerosis of the pulmonary vessels on the affected lobe was also much more severe than in other parts of the lung.

Another aspect of this problem in which we were interested was to establish the nature of the anomalous vessels. They have been called pulmonary with abnormal connections Actually the histologic structure showed them to be quite different from pulmonary afteries and they resembled the muscular or hybrid arteries that arise from the aorra. Their elastic fibers were longer and thicker and their walls contained much more muscle than there is in pulmonary arteries. We also did micro incineration studies of the anomalous vessels and of normal pulmonary arteries Arteriosclerosis in blood vessels is ac companied by an increase in the mineral ash residue following microincineration The 15 year-old boy's vessels were micro incinerated and showed far more mineral content in the pulmonary artery than you would find in a normal pulmonary artery By comparison the anomalous vessel had very little mineral content and did not show signs of arteriosclerosis Our explanation is that the anomalous vessel is built to withstand the high pressure to which it is exposed. The pulmonary vessels as such are not geared to that type of pressure and they re spond to increased pressure as all vessels probably do by degenera tive changes I might say that these are very marked not only in the true pulmonary arteries but there is also a marked phlebosclerosis probably reflecting the propagation of the increased pressure into the venous circulation

Doctor Johnston The specimen received in the laboratory consisted of the lower lobe of the right lung which was injected with formalin before section and a separately submitted cystic mass measuring 5 cm in diameter. Since this disease is new to me I will first present definitions. Sequestration according to the dictionary means separation isolation or seclusion. Bronchopulmonary sequestration means partial or complete developmental separation of a portion of a lobe of lung from its continuity with the normal bronchial tree. This can be of two types intralobar in which the separation exists within the pleura of the lobe of the involved lung and extralobar which exists when there is a separate cyst encased in separate objective.

The posterior and lateral surfaces of the pleura of the lower lobe of the right lung were covered by firm fibrous adhesions. An aberrant arter; 0.5 cm in diameter entered the inferoposterior medial margin and was distributed to the posterior basal segment. This region was pale yellow gray and firm Throughout were cysts varying from 0.1 to 2 cm in diameter. These were lined by pale gray glistening tissue. The lumen of the bronchus of this segment was smaller than the lumina of other bronch in the lobe. Communication between the cysts and

bronch: could not be demonstrated although a small bronchus was found adjacent to the wall of the largest cyst

Microscopic examination revealed many cysts lined by typical respir atory type of epithelium surrounded by loose conn ctive tissue in which smooth muscle fibers cartilage and lymphocytes were found. More dense fibrous connective it sue filled the spaces between cysts. This was infiltrated by lymphocytes plasma cells and macrophages some containing brown granular pignent and others with feamy cytoplasm. As mill focus of easeous necrosis was found in the cystic area. Acid fa t bacilli, and fungi were not identified with special stains. The aberrant artery was an elastic type artery similar to a pulmonary attery although stains for elast c tissue revealed larger and more abundant elastic fibers (fig. 6) than in a comparable section from a normal pul monary artery of the same size (fig. 7). The wall of the aberrant artery in the region of the intima was the seat of moderate atheromatous change. An accompanying vent was not demonstrated. There were many small muscular bronchial-type arteries throughout the diseased tissue

The separt cyst w s 5 cm in d ameter soft fluctuant and covered by a thin smooth glistening dark red blue tissue Blood vessels were not identified on the surface A cut surf ce consisted of cyst similar to but larger than those of the lower lobe of the right lung The cysts were filled wh gray glist ning tenacous secretion.

Microscopic examinati n of this cyst revealed large and small cysts simil r to tho e of the first specimen Vessels of the small muscular type were seen. There were no elastic-type vessels in this specimen.

Doctor Breckler mentioned something of the pathogeness of this disease. In the very early development of the embryo the primitive gut 1 covered by a vascular network of the splanchnic plexus which is in intimate association with the dorsal aorta. At about the 3 or 4 mm st ge the anlage of the lung sprouts from the foregut and carries with a part of this plexus. This is called the postbranchial pulmonary plexu and into this the right sixth agetic arch connects to become the pulmonary artery Now f for some reason in the course of devel opment there i not a severance of this commun cation between the postbranchial pulmonary pl xus and the dorsal aort anomalous arteries may remain and be directed into the base of one or both lungs. In the development of the pulmonary bronchial tree at about the fetal age of six months there are some 17 generations of bronchial branching and then the process slows down until after birth After birth the branching continues into midchildhood. At the time it ceases, there are 24 generations of b onchial branching. The concept which I be lieve originated with Price and associates wh first described a series of these (although there were individual reports before) in cludes the traction theory which accounts for the breaking off of de veloping bronchial buds by the tract on exerted by the aberrant vessel There are cases reported of aberrant vessels without pulmonary anom

alies Pryce and others have divided the abnormalities into three general categories. Type 1 lacks pulmonary anomalies the vascular supply to notmal lung being through the anomalous vessel. Type 2 is described as pulmonary sequestration in which the vascular supply through the abertant vessel is also distributed to normal adjacent pulmonary tissue. Type 3 occurs when the anomalous vascular supply is limited to the sequestration. Others have said that this process of traction on developing buds from the anomalous vessel during embryonic development will even account for agenesis of the lung.

Pathologic diagnosis

Bronchopulmonary sequestration with both intra and extralobar sequestration

Doctor Johnst n Extralobar sequestration is synonymous with an accessory lower lobe of lung

I would like to ask Doctor Weiss if he would say a few words about the clinical aspects of this particular disease

Deete W 1 Fortunately I am in the same position as the pathol ogist here All I have to do is transmit a little information gleaned from a recent article by Bruwer and associates* on the clinical aspects of this rather unusual lesion. This was a report of five cases subsequent to a previous report by him and his group* at the Mayo Clinic in 1950 when they reported their first five cases. A recent editorial? in the Journal of the American Medical Association reviews much of the literature on this subject. From the standpoint of incidence Bruwer and others* mentioned that they were able to collect 79 cases in which the lesions had been resected. These included cases not only of actual pulmonary sequestration but some cases of anomalous vessels only Pryce and co workers mentioned that five cases were found during the course of 280 resections making an incidence of 1.7 percent of resected pulmonary lesions.

Personally when we uncovered this case this was a new entity to me too but as I look back about nine years I can recall one other case in my own experience. A child of II years of age seemed to have an emptema in the left chest and died rather suddenly of exsanguina tion due to erosion of the left subclavian artery by the infection Under lying this was a collapsed lung with cystic disease and an anomalous vessel came off the aorta to supply the base of the lung. At that time we didn't make the diagnosis either even at autopsy. The correct diagnosis was suggested at a clinicopathologic conference by Doctor John Alexander who was visiting the hospital In 69 cases in the literature in which the side was mentioned the right side was involved in 30 cases the left in 38 and only one case was bilateral Bruwer and associates mention sex in only 30 cases. 20 patients were male and 10 female Five cases were associated with one of the following congenital anomalies diaphragmatic hernia in the first case.

tration of the diaphragm in the second pulmonary arteriovenous fistula in the third pulmonary agenesis in the fourth and congenital cystic disease in the fifth

Clinically most of these conditions are manifested by symptoms of intermittent infection and this usually starts during the first two decades of life. There is nothing specific about the clinical picture and I think the diagnosis is probably very seldom made preoperatively unless one is aware of the entity. On toentrenogram one sees, however a rather characteristic location as Doctor Breckler mentioned a posterior basilar location frequently with solid masses or cavities. If the cavities have fluid levels they have a small communication with the bronchial tree We should have done a bronchogram in this case because it probably would have pointed to the correct diagnosis for anyone who was acquainted with the disease because the lipiodol would certainly fail to enter the involved bronchial tree The findings on bronchoscopy are not specific. In the differential diagnosis I'll just mention a few things that come into consideration abscess empyema congenital cyst granulomas neoplasm and probably more bizarre things such as echinococcu cyst

D et J h t Doctor Samson would you like to close the meeting?

D + 5 ms I think it is most inter ting and I think Doctor Berg mann, Doctor Weiss and Doctor John ton should be congratulated for the presentate n you have just see this morning. These unusual thing th t come along are unusual only because we haven t seen them

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A docto must work eighteen bours a day and seven days a neek If yo ca not console yourself to this get out of the profession - Martin T Fischer

Oxyphil Cell Adenoma of the Tongue

H HASKELL ZIPERMAN Lieutenant Colonel MC USA THONAS H CAPERS Captain MC AUS

XYPHIL CELL adenoma (oncocvtoma) is a rare tumor sel dom occurring in any site other than the parotid gland and, to the best of our knowledge, never previously reported in a person vounger than 49 years of age When first seen, this five and a half year old patient presented a problem in diagnosis because tumors of the tongue other than those originating from the tongue mucosa are rare. The clinical characteristics of this tumor, however, suggested a subepithelial tumor originating deep within the tongue structure. In considering the differential diagnosis, due thought was given to the possibility of this represent ing either a hemangioma, a lymphangioma, a rhabdomyoma, a leiomyoma, or a rhabdomyosarcoma Because of the extreme rarity of oncocytoma in this location and in a child, this was not even considered in the differential diagnosis.

CASE REPORT

A five and one half year old gurl was admitted to this hospital on 9 August 1953 because of a tumor mass in the midportion of the left half of the tongue. Her mother stated that she had first noticed this mass in May of 1953 and so far as she could tell it had not increased in size.

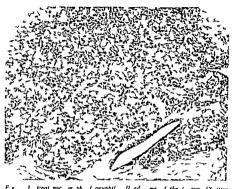
The patient had a nontender tumor mass about 2 cm in diameter deep within the midportion of the left half of the tongue. The mucosa over the mass appeared normal. With the exception of moderately hyper trophied and mildly inflamed tonsils all other findings (physical examination laboratory and roentgenographic) were within normal limits on 11 August the mass was totally removed through an incision on the left lateral side of the tongue. The tumor was found completely encapsulated and was easily shelled out by blunt dissection from the surrounding muscle fibers.

Pathologic Findings Grossly the tumor was well curcumscribed and encapsulated It measured 2 cm in diameter and exhibited a soft gray tan cut surface which appeared slightly lobulated by thin strands of connective tissue. There were no cystic areas

Microscopically (figs 1 and 2) the tumor appeared to be encapsul ated by areolar and fibrous connective tissue arising from the surround

From the 141 t Gener I H speni Kyushu Japon Col Z perman is now a gned to Med cal Fild Serve Schol Fort Sam Houston T x

ing tongue strom. The fibrous tissue coursed in a trabecular pattern into the tumor mass separating it into fairly large groups of cells arranged in cords and columns. In a few places near the margin of



Poot mic gr ph f oxyphil ll ad ma f the f gue (× 100)

the tumor the connective tis ue cont ined a few fibers of normal well d fferent ted striated mu cle The individual tumor cell were large a d generally round or oval n sh pe The cytoplasm of the cells had variably int use strongly eosinophilic staining property and under high magnification was distinctly granul r in ppearance The nuclei

were usually central in location oval in shape and were small to moderate in size In many there was a deeply staining prominent single nucleolu Occas onally the nucle were slightly irregular in hape and eccentrically located Definite mitotic figures within the cells were n t observed

Within some of the cell gro ps ther were a few pseudoacinous spaces \liny f the cells were stu ted within clear paces In few of the ad noid appearing spaces thir was an accumulation of eosinophilic mat rial Several lymph space but no definite duct spaces were observed in the tumor m ss. This w s considered to represent an oxyphil cell adenoma (ben gn) of the tongue (This d gnosis has subsequently been confirmed by the Arm d Forces Institut of Path ology)

Postoperative Course About two weeks postoperatively a small stitch abscess of the tongue was incised, yielding about one milliliter of pus

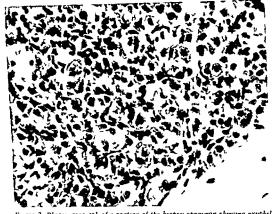


Figure 2 Photomicrog aph of a section of the biopsy specimen showing oxyphil cell adenoma. (* 450)

In December a biopsy of an area of firmness of the left border of the tongue was performed because it could not be determined clinically whether this represented scar tissue or a recurrent tumor mass. The biopsy specimen consisted of scar tissue. No evidence of recurrent tumor could be found.

DISCUSSION

Because these cells are usually only found in patients more than 50 years of age, and because oncocytes occur in increasing numbers with advancing age, it has been postulated that these tumors arise from senescent changes in a parotid duct cell whose counterpart exists in a variety of locations, including trachea, pharry a esophagus, buccal mucosa, pancreas, hypophysis, broast, thyroid, parathyroid, fallopian tube, liver, and stomach. The precise significance of these cells occurring in such a variety of locations defies explanation. In spite of the vide spread distribution of the cell type, tumors formed by oncocytes have been found only in salivary glands, pancreas, thyroid and parathyroid glands, and hypophysis.

Meza Chavez widened previous observations with regard to the occurrence of these cells in the normal parotid gland He found oxyphilic cells in nine of 100 parotid glands examined at autopsy In four patients who came to autopsy the cells produced nodular hyperplasia and in five they were present in ducts or acini Foote and Frazell' reported that in over 800 salivary Lland tumors of all types examined at Memorial Hospital between 1930 and 1949 only a single oxyphil cell adenoma was found

The exact origin of the oncocyte remains a mystery According to Ackerman they are not normally found in persons under 20 years of age The Welsh cells of the parathyroid gland (a related cell) representing an exception to this rule usually occurs in late childhood but has been found as early as the seventh year It has been suggested that oxyphil cells represent a new form of an already differentiated cell, or the equivalent of rediffer entiation. The natural occurrence of these cells with increasing age has been used as evidence that their peculiar appearance is the result of senescent change. The fact that they apparently reproduce amitotically whereas in physiologic regeneration of salivary glands mitosis is the rule is additional evidence supporting the idea of senescent change None of the oxyphil cells seem to have a function other than as a lining cell for ducts and acini We saw no evidence of duct structure in the tumor from our patient to suggest other than unicellular origin as was true in the case presented by Christopherson

The occurrence of this tumor in a child is most unusual be cause heretofore this tumor has been reported as occurring solely in adults more than 49 years old We believe that this exceptional case casts some doubt on the concept that the tumor results from an overgrowth of a senescent salivary duct cell It is further unusual that the tumor occurred in the tongue To our knowledge no instance of this tumor in the tongue has previously been recorded

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Stop telling men not to worry all thinking m n do and such only do the wold swork - Mattin T F scher

A Peculiar Nodosity Associated With Arthritis

HOWARD S YAFFEE Lieutenant junior grade (MC) USNR

ODOSE LESIONS are found in many conditions and may be produced by multiple causes The following is the report of a case of peculiar, recurring nodosities associated with arthritis

CASE REPORT

A 24 year old white single seaman entered the U.S. Naval Hospital Chelsea Mass on 23 October 1953 complaining of pain and swelling of the left knee of four weeks duration.

Present Illness On 15 June 1953 the patient's left knee had been wedged between a dock and a motor launch. An area of redness, "like a brush burn appeared over the inner left knee which was swabbed with merthiolate and bound with an ace bandage in the ship's sick bay. The next morning his entire left leg was swollen discolored and cyanotic Examination disclosed diminished peripheral pulses and a palpable cordlike swelling of the left calf. A diagnosis of throm-bophlebitis secondary to trauma was made. Treatment consisted of bed rest ace bandages and 180 mg (300 000 units) of penicillin twice a day for five days. Two weeks later an erythematous fluctuant area resembling a blood blister," appeared spontaneously over the medial left calf. Thirty six milliliters of serosanguineous fluid. was aspirated from the lesion. Two weeks later the patient appeared to be completely well and returned to dury.

On 3 July he injured his right knee in the same manner as previously described and immediate pain swelling and limitation of motion fol lowed but subsided on a few days of limited duty

On 30 July the patient noted the gradual appearance of erythematous dusky slightly tender lumps on the right thigh and left iliac crest These lesions slowly enlarged and discharged a thin brownish fluid

One week later the patient was admitted to a small dispensary in Asples Italy at which time a new lesion was noted on the lower part of his abdomen Laboratory studies consisting of a complete blood count hemoglobin determination kahn test and bleeding and clotting times were within normal limits. Culture of the drainage from a lesion

From B ston N al Sh pyard Be ton, M ss. Lt. Yaff e s now assig ed to U S h al Hospital Chel a Mass

on the left iliac crest was negative however a few gram positive cocci were seen on smear Desp te the bsence of fever or consti turional signs and symptoms the patient was hospitalized for two weeks receiving hexavitamin and ascorbic acid tablets. The lesions subsided slowly leaving crythematous stellate slightly puckered scars. He was returned to duty with a diagnosi of nonsnecific cellulitis

On 15 September the patient's left knee swelled without apparent cause He was treated with limited ctivity ascorbic acid tablets aspirin and terramycin (brand of oxytetr cycline) Becau e of the persistent swelling he was transferred to the U S Nav I Hospital Chel ea M ss on 23 October with the d gnosis of traumat c synoviti

Past III tory When he was a child the patient h d had numerous att cks of sneezing and dermatitis after mowing a lawn. In 1945 he had had hematuria for three days following football nury In 1951 he received aureomycin for one week because of acute laryngitis. In March 1953 he injured his back while carrying a load of sugar following which he had a tempe ture of from 100 to 101 F for two weeks H was treated with 0 3 gr m of spirin every four hours 180 mg (300 000 unit) of penicillin tw ce a d v and finally 250 mg of aure mycin every three hours

He is fond of milk and drinks I rge quantities as much as nine ou rt a d v F mily history and system rev ew were noncontributory

Phy ical Examination. The patient was tall alert intiligent and co-operative and appeared to be in good health P sitive findings were lim ted to the sk n and joints Two dusky erythematous pgm nted scars were present over the upp r m dial part of his right thigh ard left iliac crest He walked with a marked limp. The left knee was swollen parti lly flexed and externally rot ted Ther w obviou periartical r and intra articular effusion with pitting edem present to the level of the tibi I tubercle. The synovial margin was thickened nd tender Motion w limited to flexion of 40 and extensi n of 160 There w no instability of the leg

Laboratory Findings Laboratory d ta revealed a white blood cell count of 8 100 per cu mm differential count hemoglobin and uri nalysis were within normal limits R entgen examination disclosed soft tissue effus on with ut bone injury

Course in Hospital On the day following the patient s admission to the hospit 1 50 ml of yellow opal scent fluid which was sterile on culture and smerr was aspirated from the joint A culture t ken for ac df st organisms was later reported neg tive. The fluid was loaded with red and white blo d cells Flocculation occurred on add tion of dilute cetic acid indicating the pre-ince of abi imal mucin.

On 25 October two days later the right knee became red, hot and swollen The process subsided in two weeks but there was residual swelling and limitation of motion The temperature remained normal Laboratory studies including sedimentation rate blood uric acid intravenous pyelograms roentgenograms of the chest and an electrocardiogram were all within normal limits

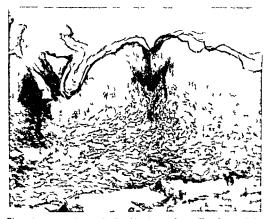
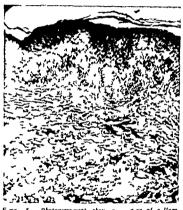


Figure 1 Persvascular round-cell infiltration in the papillary layers of the derm's is seen in this photomicrograph of a specimen from a healed scarred a ea. The ep dermis shows heavy pigmentation of the basal layer of the stratum germinatioum (× 100)

On 19 November without apparent cause both knees again became actuely inflamed. Hot packs produced only slight improvement. Aspiration of the joint was repeated yielding 8 ml of fluid containing 28 polymorphonucleocytes but otherwise unchanged from findings of previous examinations. Twenty five milligrams of hydrocortone acetate forand of hydrocortisone acetate in saline suspension was instilled into each joint cavity with resolution of inflammation in four days. However, six days after treatment the knees again became red, hot and swollen. The intra articular hydrocottone was once more administered with complete subsidence of arthritis in three days.

The patient remained well until 16 December at which time an ery thematous indurated slightly tender lesion was observed on the upper medial part of the left thigh. The patient was transferred to the derma and scattered inflammatory cells. The epidermis was slightly irregularly spongiose and well contained. There was moderate pigmentation without evidence of specific infection or malignancy.

Diagnosis The diagnosis was reported as compatible with the Weber-Christian syndrome The slides were reviewed by several other competent pathologists including a histopathologist of the skin They could not reach a specific diagnosis however one of them was struck by the marked collagen disruption and necrosis reminiscent of granulums annulum.



F gus 5 Photomicrograph show g a ea of c llage cro the midcon m co laim g f ci of chronic inflammatory lls. (100)

Clinical Course On regimen of bed rest without medicat on the lesion subsided leaving a superficial zone of pigm nitation. The partiest was discharged to his ship parently well

On 19 February 1954 while the patient was at sea without app tent antecedent c u e new cutaneous nodos tes appeared over his lower abdomen and inn r right thigh Add to nal lessons involving the right hip region appeared durin, the next six weeks. These lesions drained sidd several others previously.

On 7 April the patient was readmitted to the hospital where he appeared well except for slight pain in the left shoulder and two active lesions from which drained a thin brownish watery fluid Laboratory studies including roentgenograms of the knees shoulder and skull showed no abnormalities. Figures 4 and 5 are photomicrographs of biopsy specimens at this time.

Bacteriologic study of the drainage was negative on smear culture and acid-fast examination. A fat stain on the material revealed clumps of free fat. A frozen section stained for fat disclosed free fat extending into the superficial dermis lying free in large globs and enclosed in large macrophages.

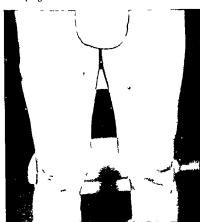


Figure 6 Appearance of pat ent s lessons

The lesions again subsided in about three weeks without treatment but recurred again (fig. 6). After discharge from the hospital lesions again recurred involving the back and arms subsiding as before Throughout the course of the illness the patient has felt entirely well with no evalence of fever weight loss or other constitutional symptoms.

DISCUSSION

The reported case, although possibly related to the Weber Christian syndrome is believed unique. Of etiologic interest

is the large milk consumption as much as nine quarts a day However it is unlikely that he obtained this quantity while at sea The relationship to trauma and thrombophlebitis is not clearly defined although possibly connected with his subsequent

The arthritis in this patient is somewhat atypical probably representing a form of rheumatoid arthritis. The distinction he tween traumatic and rheumatoid arthritis is discussed in a monograph by Ropes and Bauer' who point out that trauma is frequently the precipitating factor in rheumatoid arthritis and this be comes especially confusing in monarticular disease If joint symptoms do not appear for 12 hours or more following trauma or persist for a month or so after one should hesitate to make the diagnosis of traumatic arthritis

Somewhat unusual but by no means rare is the absence of constitutional signs and symptoms such as fever easy fatiga bility weight loss anorexia splenomegaly and debility Sim ilarly the laboratory findings were within normal limits, including repeated sedimentation rates a finding noted in 5 to 10 percent of patients That the local joint disease is of a mild nature is confirmed by the lack of objective evidence of bone changes such as subchondral atrophy and so on The abnormal clumping of mucin on addition of diluted acetic acid is suggestive of changes noted in the joint fluid of patients with rheumatoid arthritis. In fectious arthritis is ruled out by the history laboratory findings and clinical course

The response to 25 mg of intra articular hydrocortone followed by a "rebound in six days with apparent cure by reinstillation is of interest. The reappearance of cutaneous lesions 19 days after the initial injection of hydrocortone suggests a possible etiologic relationship however the rather prolonged latent period and the absence of lesions at the site of injection seem to miti gate against-this hypothesis

The differential diagnosis of the cutaneous lesions included erythema nodosum, erythema induratum nodular vasculitis drug eruption lymphoma atypical collagen disease factitial lesions such as those produced by camphor injections and the Weber Christian syndrome Of these only the latter need be considered

The Weber Christian syndrome was first delineated by Weber's in 1995 although single cases had been previously described by Pfeifer and Gilchrist and Ketron It is a relapsing nonsuppurative febrile panniculitie in past years numerous cases with single and multiple lesions with and without fever with and without suppuration and at times associated with arthritis theuratic fever and other collagen diseases have been re

ported Suggested causes are varied, including drugs, bacteria, heat, cold, or trauma "1" The syndrome is probably a variable clinical and pathologic response to diverse agents Beerman's" views on the pathogenesis of this condition is up to date and worthy of review

I believe that my case, although vaguely related to Beerman's is unique. The initial cutaneous lesion was described as a "blood blister" containing "serosanguineous fluid." It is important to correctly establish the nature of the fluid as the initial diagnostic and Pseudobullae containing fatty material have been described, both in local and in generalized distribution, in cases of fat necrosis. 14-20

In one such case microscopic examination disclosed oily globules Such examination differentiates the absence of red blood cells, ruling out a hemorrhagic exudate It is vital that bacteriologic preparations be collected using aseptic technic, because in this patient a mistaken diagnosis of cellulitis was entertained after a smear in a small field dispensary revealed gram positive cocci," undoubtedly contaminants from the skin

The pathologic picture is believed to be the major factor in differentiation of the entity reported in this case pathologists, including a dermatopathologist, were loathe to make a specific diagnosis, despite the marked panniculitis, because necrosis was seen both in the fat and in the collagen tissue The changes in the corium were severe, a finding not seen in the Weber Christian syndrome ²¹ The disruption of collagen and necrosis raised the possibility of granuloma annular like disorder, all though the other features of marked reaction of the fat, such as necrotic masses of free fat and foamy macrophages, rule this out

SUMMARY

A case of recurring nodose lesions in a 24 vear-old white seaman, in which there was associated arthritis, presumably theumatoid in nature, was possibly precipitated by trauma and followed by thrombophlebitis. Of interest is the prolonged his tort of excessive milk ingestion. The pathologic features of the cutaneous lesions were a necrotizing panniculitis with additional collagen necrosis. This disease process is recurrent and apparently has not affected the patient's general condition.

ADDENDUM Correspo dence with the patient reveals that he has continued to d velop new lesions over the arms legs trunk and abdomen which drain as d ser bed. The material oils he clothing and bedding and has cau ed intermittent depres on Despite hi cutaneous affliction he has otherwise i mained well. He is woking and a active he is under the care of an internist and has tece ed no or armore to disc.

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Hall the modern drugs could well be thrown o t the wi dow except that the bids might at them.

Schistosomiasis of the Colon Treated by Resection

PAUL V KIEHL Lieutena i Colonel MC USA JAMES S MITCHENFK Jr Captain MC NGUS

CHISTOSOMIASIS as a public health problem in the tropics is surpassed only by malaria and tuberculosis. Three types of schistosomes are the causative agents. Schistosome mansoni, Schistosoma haematobium and Schistosoma japonicum only S mansoni, which has the widest distribution, is present in Puerto Rico. Weller and Dammin, in a study of selective service registrants in Puerto Rico, found the ova of schistosomes in 997 percent of 19,339 men on whom a single stool examination was done. This organism attacks principally the liver and the colon Massive and repeated infestations cause portal cirrhosis and eventually portal hypertension. In the colon varying degrees of proctitis occur but only rarely do large granulomatous lesions requiring surgical removal develop.

Man contracts the disease by physical contact with fresh water polluted with ova from human excreta. The snail acts as an intermediate host, ingesting the ova, and releasing motile cercariae which penetrate the epidermis and mucous membranes of man These forms finally migrate to the portal venous system where they undergo maturation into separate sexes. Myriads of ova are produced Some of these migrate to the minute portal venous branches producing granulomata and fibrosis while others are extruded into the lumen of the gut and are passed in the feces thus completing the cycle Ova lodging in the submucosal wall of the gut, particularly the rectum occasionally produce the large intraluminal granulomata seen in our patient. These organisms do not multiply within the definitive host (man) but the damage is done by continuous deposition of ova Thus it seems that repeated reinfestation with the asexual cercariae from polluted water is necessary to produce the severe manifestations of the disease

According to Kehoe and Lang who conducted a study on military personnel in Puorto Rico 46 percent of their 129 patients were asymptomatic Also in Puorto Rico, Hernandoz Morales found that 50 percent of 255 patients studied had only prominent viscularity of the rectal mucosa with scattered minute hemorrhage.

ic areas particularly in the proximal rectum In five patients he noted small papillomatous lesions but no large ones Many patients with normal appearing, roctal nucesa will show microscopic evidence of the disease if a biopsy of the rectal nucesa is taken

The treatment of schistosomiasis due to S manson: is primarily medical surgical treatment being reserved for localized lesions. A venous shunt procedure may become necessary in this disease because of sovere portal hypertensien with esophageal verices. Ova obstructing the blood supply of the appendix may produce acute gangronous appendicitis requiring surgical treatment. According to Recio surgical intervention may become necessary because of intestinal obstruction or malignant degen oration. Considerable bleeding may occur from an ulcorated granu loma and may result in chronic anemia.

CASE REPORT

A 30-yea old Puerto Rican officer wa dmitted to this hospital on 12 April 1954 with a chief complaint of int imittent rectal bleeding for one y ar. The past and family histories were noncontributory. He had been in g od general le lit until the onset of the present illness. Most of hi. I f had be n spent in the city of Mayaguez an area where relate the left of the contributory of the school of the contributory of the school of the contributor of

About one year before the p esent admission the pati in began passing smill mounts of bright red blood in his stools. He also developed intermittent louts of diarrhea of four or f ve watery stools a day which frequently contained blood and considerable mucus. In Febr ary 1954 on sigmoidoscopic examination at this hosp tall a large polypoid granu loma was n ted in the upper rectum occupying the bowel abo t 6 inches above the sphintert Multiple pseudopolyp which seemed to consist of congested edematious folds of mucosa were noted A few pinpoint areas of extreme vascular dilatation cls to the suiface of the mucous mem trane undoubtedly represented bleeding sites. The lesson was not of the friable easily bleeding nature of carcinoma. Examination of several biopsy specimens of this area of the rectum demonstrated the presence of 5 manson.

On 31 March a course of therapy consisting of 75 ml of fuadin (brand of thophen) was completed At this time proctoscopic examination fevealed no change in the rectal les on Pecause the lesion and the bleeding persisted a resect on of the lesion was considered the only definitive treatment Obstruction at a later date a a result of scatting was a remote possibility. The patient w sobese he weighed 230 pounds and gave no history of recent weight change. The liver and spleen could not be felt.

Laboratory studies on admission revealed Hemoglobin 16 7 grams per 100 ml leukocyte count 7 410 per cu. mm with 52 percent neutro phils 39 percent lymphocytes and 9 percent eosinophils Barium enema and air contrast studies showed a constant polypoid lesion near the rectosigmoid junction. The remainder of the colon was normal

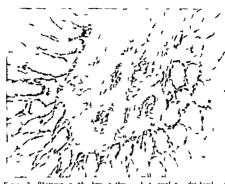
At operation on 26 April the lesion was found to be located in the sigmoid at the peritoneal reflection. The bowel was grossly normal on the serosal surface but the intraluminal mass could easily be felt. The bowel was thoroughly mobilized and a segment 9 cm in length excised A two layer anastomosis was done.

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Pig re 1 Gross specimen showing polypoid mucosa and a ea of ulceration from which hemorrhage probably occurred. (Ulcer is at the lower portion of specimen just to left of center)

The patient's postoperative course was uneventful except for a mild wound infection. He was discharged from the hospital on the sixteenth postoperative day and had no further difficulty. On 16 June sigmoid-oscopic examination revealed the bowel to be healed with no narrowing of the lumen. The patient was interviewed briefly early in January 1955 lie had had neither bleeding nor diarrhea since the operative procedure.

Gross examination of the excised tissue which measured 9 by 6 cm showed numerous elevated sessile polypoid formations of mucosa which appeared swollen and edematous In the center of the specimen there was an area 35 cm in longest dimension which was depressed and partially ulcerated through the rucosa (fig. 1) Microscopic examination of sections showed the typical granulomatous involvement of schistosomiasis Numerous ova of 5 mansoni were seen scattered





through the submucosa (figs 2 and 3) The tissue appeared edematous There were myriads of round cells with a smaller number of polymor phonuclear cells and an increased amount of fibrous tissue

DISCUSSION

When surgical therapy has been decided on for a colonic lesion caused by schistosomiasis the question arises as to what type of procedure to use. An abdominoperineal resection in this patient was considered because of his marked obesity and the low level of the lesion. It was also suggested to us by a local surgeon that there might be poor healing of an anastomosis because even bowel appearing grossly normal often contains the own. We believe that only in very rare instances should an abdominoperineal resection with colostomy be necessary. A pull through procedure should be possible in most instances where end to-end anastomosis cannot be accomplished from above. It is not necessary to resect large blocks of tissue in operating for schistosomiasis of the colon as it is in the case of operations for carcinoma.

SUMMARY

Schistosomiasis caused by S mansomi produced a granulom atous lesion in the rectosigmoid colon Because bleeding from the lesion persisted in spite of therapy with fuadin, a successful resection with end to end anastomosis of the colon was performed

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MAGNETS IN DENTURES

A new stabilizing force that increases the serviceability of dentures has been obtained through the employment of magnets that repel. The force of repulsion is alive resilient and permanent and can be directed and controlled. The upper denture forces the lower denture down and back on the ridge. The lower denture repels the upper denture which prevents disaster when the peripheral seal is broken.

⁻HYMAN FREFMAN D D S

in Journal of the American Dental Association p 297 Sept 1953

Carcinoid Tumor of Meckel's Diverticulum

ROBERT E PIERCE M po USAF (NC)

ARCINOID (argentaffin) tumor in a Meckel s diverticulum is extremelly rare In addition to the patient reported here, only eight similar proved cases are recorded in the litera ture (table 1) A minth reported case has been determined to be an instance of gastric heterotopia 1 In only one instance were metastaxes found 1

Enterochromaffin (chromaffin argentaffin) cells take their name from their affinity for chromium and silver salts These cells are found in fishes amphiba reptiles birds and mammals They are present in all ages in the entire human alirientary tract, and even in its offshoots. They are most numerous in the duodenum being prosent both on the villi and in the crypts and in the glands of Brunner. The numbers decrease from the duodenum to the anus.

Argentaffin cells are solitary bodies which normally are never very numerous at any point and seldom are found lying in apposition. Their shape is largely determined by their location, the cells adapting themselves to the available space. The nuclei are round with a distinct nuclear membrane and are vesicular in character.

The cytoplasm contains numerous small granules which show a marked affinity for chromium salts and silver. The granules are minute irregular and tend to be round but have no definite shape. There is a tendency for the granules to be located in the cytoplasm between the nucleus and the basement membrane of the cell suggesting the name basal granular cells.

The physiologic role of the chromaffin cell is unknown and its origin is similarly undetermined it is theorized that (1) they arise in the intestinal epithelium and (2) from the ectoderm outside of the epithelium. They are found intimately associated with the ganglion cells and fibers of the sympathetic nerve plex uses of the alimentary tract. Because of this intimate association they have been regarded as related to this system functionally as well as genetically

Interest in these cells arises because of their implication in the production of tumors of the intestine notably of the appendix. J ly 1955)

In 1907, Oberndorfer' advocated the separation of these tumors from the carcinomata and, because of their usually benign nature, proposed the name "carcinoid," which has become generally accepted The tumor cell of the carcinoid, which is developed from the enterochromaffin cell, shows many of the peculianties of its genotype. The cytoplasmic granules may be large or small. They often show characteristic staining with chromium, silver, iron hematoxylin, and acid dyes. Numerous cytoplasmic vacuoles occur.

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TABLE 1 Carcinoid tumo s found in Meckel s diverticula

Humphreys found from a study of carcinoids of the gastrointestinal tract, with the exception of the appendix, that 30 percent were multiple Thus discovery of one of these tumors at operation should lead to a search for others

Catenoid tumors usually occur as yellowish white rubbery nodules in the submucosa? They may vary greatly in size There is little difference in gross appearance from adenocarcinoma Microscopically they are composed of round or polyhedral cells which are usually clumped in nests or strands The nuclei are vesicular and the cytoplasm is pale and poorly defined Staining with silver or chromium salts shows the cytoplasmic granules of varying size

CASE REPORT

A 47-year-old man was admitted to the hospital with the complaint of severe abdominal pain. The illness had begun when he was awakened from a nap four hours before admission with a sudden extremely severe epigastric pain.

The only contributory feature of the past history was the occasional occurrence of a gnawing mild epigastric distress which was not severe

enough to be disabling. He had not been anotexic. The pain was not related to or rel eved by the ingestion of food and was not severe enough to make him consult his physician. There was no nausea vonting or change of bowel habits.

The f mily history was noncontributory



The physical examination revealed a well developed obe e white man in acut d stress. The temperature was $98.6\,\mathrm{F}$ respiratios $20\,\mathrm{p}$ r mire pulse $92\,\mathrm{per}$ minute ind the blood pressure was $170/80\,\mathrm{mm}$ H_g . Postive findings were limited to the abdomen. The entire abd m in showed a boardlike ng dry and was exquisitely tender. There was questionable rebound tenderness and no point tenderness. No organs or misses were palp ble because of the rigidity

The laboratory examinat on showed an erythrocyte count of 5 690 000 pr cu. mm hemoglobin was 19 grams per 100 ml The leukocyte count w s 24 850 per cu mm with differential count of 18 nonsegmented neutrophils 54 per cn its gmented polymorphonucleocytes 26 percent lymphocytes a d 2 per cent monocytes The utine was a hazy lemon yellow color with acid t act on a d a specific gr vity of 1011 No s rat albumin or cetone bodies were found Victoscopic exam

mation of the urine revealed 0 to 3 white blood cells per low power field The serum amylase determination was 190 mg per 100 ml

A roentgenogram of the abdomen showed no evidence of gas accumu lation beneath the diaphraem nor of fluid levels in the gas containing organs. There was no evidence of opaque calcul, in the urinary or bili

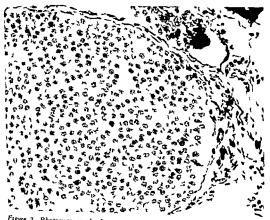


Figure 2. Photomicrograph showing argyrophilic gran les in the cytoplasm of the tumor cells (Silver stain × 450)

ary tracts. Roentgen examination of the chest revealed essentially normal findings

An emergency laparotomy was performed two hours after the pattent s admission to the hospital Inspection of the peritoneal cavity revealed a moderate amount of bloody nonpurulent exudate A Meckel's diverticulum, which was indurated but not perforated was found about 18 inches from the cecum The diverticulum was removed. The sigmoid colon was found to be thickened edematous and inflamed for a distance of about two and one-half inches and was about the size of a lemon Careful examination of this area revealed it to be filled with multiple

Pathologic Findings Grossly the surgical specimen consisted of a diverticulum measuring 2.5 cm in length and 2 cm in diameter The serosal surface was smooth. On section, the wall appeared thickened and rubbery No definite nodules were palpable. The lumen contained greenish firm material which partially obstructed it.

The microscopic examination showed a wall composed of two layers of smooth muscle A lining of villous mucosa resembling that of the rleum was present in the submucosa and infiltrating the muscularis (fig 1) were numerous nests and cords of round and polyhedral cells. The cellular boundaries were poorly defined The nuclei were large and well defined The cytoplasm was granular in appearance The cells were supported by a fine librous stroma They were uniform in appearance and no mitosis was observed

Staining with Masson's silver stain showed argyrophilic gran ules in the cytoplasm of the tumor cells (fig 2) These granules varied in size and shape and were scattered haphazardly through out the cytoplasm The granules were also positive to Masson s to throme stain

Following surgery the patient recovered rapidly and with no complications He was discharged as completely recovered after seven days of hospitalization

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PROMOTIONS OF OFFICERS

The following officers of the military medical services on active duty in the Army, Navy, and Air Force have recently received temporary promotions to the rank indicated

Medical Corps

R be tO Amdall Capt. USAF Alb t A. Ap h ga Capt USAF M to W A plund Capt USAF k ith Auli Lt Comdr USN Zbigni w J B cz w k Li Col USAF J eph C. Bailey Capt USAF HwidABk Li Comdr USN Geog C. Barr tt Capt USAF Charl B B t ll Lt Comdt USN E g H B t a Lt Comd USN R bert H B y ng Capt USAF H man D B t Copt USAF Th m s P Berry Lt Comdr USV h th E B bb Capt USAF Geog F B d Lt. Cord US Ge g C. Bour Lt Comdr USN Jh L B dl y Mar USA Flyd S. Bra Capt USAF Thoma J Book J Lt Corner USY B | m | H Brown, Capt USAF Loy T B . Lt Corner US Th ma B Bow g Capt USAF Perry A B ck t Capt USAF 1 h \ B yan, Lt Comdr US \ Ralph W Budd s J Lt. Cornet US V Th m E Burrow Lt Cornet US V W Iter H. Byerly Capt USAF TII m P Byt Capt. US1F John W Campb Il Capt USAF Jetom G Car Il Capt. USAF Sam Ca at Lt. Comet US R ad lph Catlin J Capt USAF J an A Chapma Capt USAF Frankli J Ch Capt USAF Thom R Cl mon Lt Cometr US Jh D Coff y J Li Comb USN Nishi C. Cont. Capt USAF Jh V Co nolly Capt USAF 1 B Copl y Capt US1F D 4 H. C nn sham Lt Cored USV R bert E. C an gham Jr L1 Corab USA Theodoxe C. H wad Capt USAF Leo V Curua, L1 Corab USA Robert T H she Capt USAF Charl E Curt ss Copt. USAF Chalap Dris, Capt. USAF

H rold A. Davi LL Comd USN B try D ck Capt USAF Robe t A Denniso Capt. USAF Rt hard Derby Lt Comit USN Vinc at S. Dg ul o Capt USAF He yR.D k Jr Capt USAF Edw G Eby Lt Comdr USA R bert J F urchild Capt USAF R b rt K Fankha s Lt Comdr USA M k J F tap t ick Capt USAF God a H Fl ch k J Capt USAF Gl Floyd Lt Contact USA Will m P Folck Lt Constr USA R hard C Fowl Lt Comdr USV Gl don C F Capt. USAF Vnc nt J F da Capt LSAF Perry Futterma Lt Corndr US ? F sSGd J Capt USAF Jsph1Grc J Lt Cornetr USA Will am B G tvey Copt USAF P J G det Lt Comdr US Phil o O G b Lt. Comet US H mer & Godf y Capt. USAF Har Id Goodman Capt. USAF Im EGodm Li Corner US J hn B Go man, Capt USAF All L G uld B J Lt Comet USA Edgat D. G dy Lt Comet USA O at Gray J Lt. Comet USA F kD Gen Lt Comdr USV Roy R. Gt & Lt Cometr LSA Joe J G iff Lt Corner USV Pul V Gustafs Lt. Corner USV H ty M H g ney III Capt. USAF Will d R. H Lt Corner USA Carl J H upimann Lt Corner USA J me B H vt Lt Corner USA I me B H shaw Capt. USAF Georg M Himadi LL Comstr USA] me C. Hods s.] LL Comdr USA Thomas C. Iden LL Comet USA Edwa d P Irin & LE Comet USA Samuel C. In & Jr. LL Comd USA

Medical Corps-Continued

Pulh I bs Capt. USAF M ti D J H Capt USAF Robe E. I Lt. Comdr USN O B K ha Lt Comdr USN Ma hilk to Lt Comdr USN Sum er K ufm Lt Comdr USN
Donald M K Lt Col USAF
Do ld J K ll ! Capt USAF Da dM Kl Capt USAF Will m T K ik Capt USAF Clar E know! Le Comdr USN J H Knowl Capt USAF J h D K fch k, Lt Comdr USA H ary F Kram J Lt Comet USN H y K Lt Comet USN Leo d J K I J Lt Comder USN F d P K wm b Capt USAF A the y M. Kurl ad, Lt Col USAF R b H L & Capt USAF Jeph R L gd Capt. USAF Geog C. L w LL Comdr USN Will m R. Lee LI Comdr USV Edw d J L an Capt USAF
P H L vn a Capt USAF
J tk J L w Lt Comdr USN Rob rt A. L w Capt USAF Sol m E Ltf Lt C I USAF Dal R L dall Copt USAF V no R L nl Capt USAF I ha H Lodg Capt USAF J ph P Loo Capt. USAF R be H F Ly h, Li Comdr USN H b I U Mar Capi USAF Ribad J M rt n, Lt, Comdr USN Raymo d G M hew Lt Comdr USN Tr E. May Capt USAF J ck M M Cab Capt. USAF Will m C. M Comi k Capt. USAF Jhall ME Li Cometr USN L R.M.F. land J Lt Gomd USV Teren F McGu Capt USAF Charl J M P ak Lt Comdr USN Chal A.M d J Le Comde USV K BM II J Le Comde USV 1 hn D Miller Capt USAF Jh P Mill Lt. Comb USN CI yto C. M & B, Capt. USAF Pul W M g n, LL Comdr USN H ber S. Mort LL Comdr USN Thoma L Mor ow J Lt. Comdr USA Chal C. Much Lt Comdr USA L th Q Mye LL Comd USN
] ha S N 1 Capt USAF Geo & L Nasda, Lt Comdr USV J b R. N. wk k LI Cometr USA M vs G. N wby Copt USAF Mary N be & LL Comdr USV

Edw dP Nor J Lt Cometr USN R b L N Capt USAF RII dFOk Cont. IISAF Type R-Olb (Mar USA Ge g L O bor J Capt USAF Mill d Patk Capt USAF Jm PTPuly Lt Comdr USN R b H P wl Capt. USAF I bo W P k Lt Condr 115N Ge R A P d Lt. Comdr USN Ge R H P w LI Comd- 115N Jhn H P w Capt USAF Blly J P k Capt USAF I h R Ou Copt IISAF L dbe gh J Rahh I Copt USAF G org C R Capt USAF Chal R h Capt USAF G ald B R to Capt. USAF Ad R J Lt. Comdr Herbe R fk Lt Comdr USV 1 Lt. Comdr USN Ber dRbas Capt USAF B and W R bas a, Lt Comdt USA H nry N R g LL Comdr USN Julus C. Ro h Lt. Comd USN Ch I E R II Lt. Comdr USN I w W R Capt USAF G Id E R backy Capt USAF J m A. Ry J Capt USAF Arn D Rydl nd L.t Comdr USN Ralph E. Samuel Lt Comdr USN H be F Sandm Capt USAF 1 ph A. Sch ler Lt. Comdr USN | p | h | State | L | Comd USN |
Max R	S	bnoy J	L	Comd USN			
Hart	Id F	S	hw	k	J	L	Comd USN
W	d C	Sco	Copt USN				
K	G	H	S	L	Comdr USN		
V	g	E	Se	be	L	Comdr USN	Rober H Se fld, Capt. USAF Edwa d S Sh II y Lt Comdr USN H y W Sh pp d, Lt. Comdr USN R had E Sho L Capt USAF William T Shul z, Capt USAF] ph E Shum Capt LSAF M C. Silve th Lt. Comdr USV David T Sml v Capt USAF Chal G Sm h, Lt. Comd USN D d S. Sm th LI Comdr USN L dK Sm b, Lt. Comd USV Pur Il Sonth J Capt. USAF Ri had L Smith Capt USAF Elwy M Smol n, Lt. Comdr USV Jm T Sp J Lt Comdr USY Rober T So be Lt. Comd USV Adolph J Stampfl Capt. USAF N wsom S col Capt. USAF N I F Str er Cap USAF Edwa d C. Sve L1 Comb USY

Medical Corps—Continued

Chester S. Svigals L1 Comdr USN Mrv Tatar Lt Comdr USN Goge T Tindall Capt USAF N rman B Tivi g ton, Jr Lt Comde USN Ern at F W ll e Jr Lt. Comde USN Troy H Throw Capt USAF Ralph M. Tumbe lake J Lt Comdr USN Robert B Whit Lt. Comdr USN Donald P Todd Lt. Comdr USN R hard M To k, Capt USAF J B Tr at Capt. USAF Burto L Tr Capt USAF Robe t L V n Citte Capt USAF Kermit Q Va d abo Capt. USAF Dick L Va Eld k Capt USAF The H Vas t Capt USAF J cob J Varg sh Lt Cometr USN Joh L Vigo t LL Comet USN

Duad L W lk Lt Comdr USN Moff tt R Walk r Jr Capt. USAF Willim F Walk r Capt USAF Elt G Welke Lt Comdr USN Frederick G F Wi gand Lt Comdr USA Edw d N W ggias Lt Comdr USN Gom T Will m Capt USAF Pul A Williams Capt, USAF Robert G W William J Lt Comde USN R. L. Wils a Capt USAF W rien S W rus Capt USAF Cr 1g C Wright Capt USAF J ry J Z sello Lt Comdr USN Wy B Zo k Capt USAF

Dental Corps

J hn G Alley Lt. Comdr USN Ralph N Alparo Lt Comdr USN Roy D A d w Capt. USAF Edw K A kik Capt USAF LlydM Am trng Lt Comd USA Luk J B m Lt. Comdr USN Roger C. Br yl Capt. USAF Ath y B glo Capt USAF T C Caldw II Jr Lt Cometr USN Cl k A Che y Capt. USAF Philp Ch t Capt USAF Agel D C 1 mb LL Comd USN Pter C. Cgl LL Comude USN Wibur JD kma Capt. USAF Raymond W Dolph Lt Comdr USN L FER LL. Comd USN Era t En ng Lt. Cometr USN Edward C. F br zz Lt. Comdt USN] rom] Fein Capt. USAF J ha L Gagluards Capt USAF Sa t T Ga etto Capt USAF H bet W G dag Lt. Comdr USN Pit t H Gott, Lt Comd USN R bert L G en Lt Comdt USN L wi L G th Lt Comdt USN H ld H lp m Lt Comdt USN H Id O H on, Capt USAF R land A H tr III Capt. USAF Tylor W HII Capt USAF Albert R. L. thy Capt USAF Edw td A h tz Lt Comdr USA

J seph J L mb tdi, Capt. USAF H y W Ly n, Lt. Comdr USN Jhn JM Adw Capt. USAF JP McLoud Capt. USAF Conn II C M dley Capt USAF R bert D Meye Lt Comdr USN Ubald L Montel Lt. Comdr USN Lahd YM s Capt USAF William J M wet Jr Copt USAF Ray B Muell Lt. Comd USN Dwight W N wm Lt Comd USN Ft X. P lk Lt. Comdr USN Burto H. Press Capt USAF Walt E Rall Lt Comdr USN
Robe t G R bb, Lt Comd USN Hary J Ruff Lt Comd USN Charl s E Sch t Capt, USAF William Segal Lt Comdr USN H rold R Shi is Capt. USAF Arma d M Stell Lt Comdt USN R be t A. Ta quist, Capt. USAF Call B. Thm Lt Comdr USN G orge U to Capt. USAF Edw n E W ni ld, Lt Comdr USN Glenn C. Will ms Capt. ISAF L wie c S W tter Capt USAF Thom s S. Wittma Capt. USAF Wills m G Wright Capt. USAF James R Wy tt Capt USAF Seym ut H Yale Lt Comult USN

Medical Service Corps

Jar II D Bairn gt Capt USAF I ha A Bl & Lt Comd USN H so B B restrom, Lt Comd USA Er th B wa, Copt USAF Jes C. Br wa Lt Comd USN

Booth Chilcutt Lt. Comdr USN Thomas J A Dy r Lt Comdr USN Franci H. Fly a, Lt. Comdr USN Thomas G Fowl I Lt Comdr USN Matthew F Gall gh : Lt Comdr USN

Medical Service Corps-Continued

Er NG we Le Comet USV El A G Ibault I I Cornel LSA Raddo H Cart USAF At h R. H de as L1 Cord LIN R had C Hy t, Ist Lt LSAF
R be L J h on Capt USAF
Ralph B J Capt USAF
Tilliam E k lly Lt Cord USN Georg S. L. LL Comet USA Rus II R Lun m J Ist LL USAF Chal B.N. k Lt. Comet USA G y H M san, Lt. Comet USV ROY F N I Capt USAF 1 ho R. P I to Cook USAF

K ms hG Sp 1 & Cook LSAF Call Sp w Capl USAF
Georg V Sp LL Commit USA
L Suph Capt USAF Edward T Soe kil Cont. INAF Donald J Str & Ist Lt. USAF R MS ky LL Comdy 1155 Lety D. T ley | Capt USAF Til # F C. Thal a. Lt. Comdr 115V TILL C. Th I I, COPL USAF D For Tk en Ist LL USAF Orbin R Th n M ; USAF RhdC.Rhd a, Lt Comdr USA Syl H. N. Zombran Lt. Comdr USA

Aurse Corns

Haz I M. All a, Caps. USAF El M. Am & Capt USAF Ma p A Arm IT & Capt LSAF E her P B & Capt USAF Gr E. Bl kbur t, Capt USAF Anna T B! Capt. USAF Pul O Bo Ist LI USAF Ell J B Ist LI USAF B tty V B 1 I t Lt USAF Yary J By Capt USAF Cath n P Chebo Ist L USAF A M. Coli Capt. USAF Usnlyn J Cour d Cap USAF Luc l U Cr n CapL USAF Ca dr C Curry 1 1 LL USAF Al ce C. Curt 1st Lt USAF Jan J Dobl Capt. USAF Ving 12 A Donah Capt LSAF Do by A Dv k Ist Lt USAF I LE er Capt USAF Emly J Flah ny Capt USAF S as S. GI COTE USAF El zabeth L Goet Capt USAF K b E H ml a, Capt USAF J ye L H roum, Ist LI USAF Eliz beib F Hedgl y Capt. LSAF Sat E. H to h I Capt LSAF LEAN H ym Ist LI USAF El zabeth A. J bl novsky Capt. USAF Alfa led 21 w ks, Capt. USAF Sarah M. J. H. Capt. USAF Gene k. J. Cap. USAF Mar T. J. tda. Capt. USAF

Marga R. h. l y Copt LSAF Al P Ling wil Capa USAF L u A L c y Capt USAF Lulia M ashadi, Capt USAF Nas L Vige Ist LL USAF FI N Mana, 1 ! LL USAF RECOLUSAF I N . L COL USAF Bety J Own, Capt USAF Do I P yee Capt. USAF Natal A P k t, Capt. USAF Albas J P p 1 Capt. USAF J RPW Capt LSAF
J an C R M Capt USAF March C. Ro Copt USAF A to L S al Copt USAF Mary L R. S ds Copt USAF Th da Sch Ist LL LSAF Ma be to 1 Seb or Cook USAF Emog Sh mill Cart USAF Do thy L S & Cart USAF Ri A. Stepl a, I the USAF Van y J Sen Copt USAF
Fl en E. Thoma Copt USAF
L N. Th ma Copt USAF Jan E.T s, Copt USAF Olm Y I y Capt USAF M that T hunt Capt. USAF
FI E Th Capt. USAF
Agnes T Til m Capt. USAF HI UL T rib. Capt USAF Bewedy F Vngbt, Ist LL USAF I L I was Capt LSAF

A MESSAGE FROM THE A M A

Women who are physicians should be liable for military service in the same way as male physicians. This recommendation was proposed by a special committee of the British Medical Association, which recently studied ways and means to make a military medical career in their Armed Forces an attractive alternative to civil practice.

The British Medical Association, a voluntary association of 65,000 doctors reported that the shortage of regular medical of ficers today is more serious than ever before and the Armed Forces are obviously dependent upon National Service to fill their establishments, Physicians in the United States have been subjected to a discriminatory draft law since June of 1950 to meet military medical requirements. The American Medical Association has repeatedly pointed out the need for an attractive career program for the medical services of the Armed Forces.

The age limit for conscription of doctors in England is age 30 (In the United States, under the Doctor Draft Law," the age limit for induction of physicians extends to age 51) The British report points out that by that time it is impossible for a young doctor even if he has completed the necessary postgraduate training to have acquired the shill of a specialist, it was recommended that the age limit be extended to 35 If an individual should so request his recruitment should be deferred up to that age, in order for him to receive further training as a specialist.

The committee noted that it has been many years since sex discrimination of any kind was abolished within the medical profession and there is no professional reason why it should continue with respect to National Service In fact, the British Medical Women's Federation has long been in favor of conscription of women doctors on the same terms and conditions as for men, it being recognized that those medical women who have assumed family commitments should be entitled to claim exemptions. With this proviso, the committee recommenced the conscription of women doctors for National Service

The study found that remuneration and prospects of military medical officers compare unfavorably with those of other branches of medicine. It was the committee s opinion that remuneration of

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military medical officers could most usefully be determined by a comparison with the remuneration of general civilian practi tioners making due allowance for the special features of a career in the military Several factors were offered for consideration which if adopted would tend to equalize the difference in pay between civilian and military physicians

In 1950 it was recommended that 20 percent should be added to the average general practitioner's remuneration to compensate for these disadvantages. However, the increase as established only amounted to from 8 to 10 percent for military medical offi cers and the new pay revision did not achieve the decided im provement in recruitment. The report indicates that a general civilian practitioner will earn on an average during 32 years of practice £66 848 as compared to £56 720 for the average medical officer in the Armed Forces for a similar period Spread over a career of 3º years this represents £484 per annum or nearly 26 shillings 6 pence per diem The committee therefore recommended a uniform increase for all grades of 26 shillings per diem

The report also recommended that the services of civilian medical practitioners in the United Kingdom should be utilized as much as possible generally on a part-time basis

A number of the recommendations were similar to the proposals offered by the American Medical Association with respect to medical services in the U.S. Armed Forces

Other items in the report dealt with (1) specialist pay (2) retired pay and widow s pension (3) additional inducements (4) promotions (5) retiring ages (6) facilities for postgraduate stud ies (7) training of specialists (8) economy of medical manpower and (9) use of civilian doctors

THE MEDICAL OFFICER WRITES

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Z had M.A. L.C. I MC USAR. Renograd atramedullary att ducts a of multipl Kir her wir at ulna m thod of ch f arm fra tw s or in 1801 ted fra rur ful h fr. Mul M. d. 116 23-2785 APT 1952.

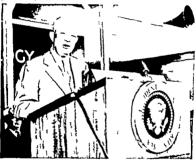
DEATHS

- CALDWELL Clyd W Drworth, L estenant Colonel DC USAR Brockton Mas H adquart r 1277 Service Unit Camp Milmer N J Graduated in 1924 from Tufts College Dental School Bo ton Ma s appointed a first lieut nant 12 Oct ber 1932 ord red to active dury 5 August 1941 died 5 May 1955 age 55 at Valley Fo ge Army Ho p tal Phoenixville Pa
- CARR Josephine Kelly Captain, ANC USA Millington Md., assigned to 9956th Service Un t, Letterman Army Hospital San Francisco Calif gradied in 1931 fom Delaware School of Nursing Milmington Del appointed a second lieutenant in the Army of the United States 24 November 1940 commiss oned a econd lieutenant in the U.S. Army 7 November 1940 died 8 April 1955 age 42 at Letterman Army Hospital of hypocapita
- DI PIZZO Daniel Ang lo Lieut nant junior grade (DC) USNR Elizabeth N J U S N val Ho piral S Albans N Y granduared in 1954 from the St Louis Un v is sty School of Denisary: prointed lieutenant, junior grade 21 june 1954 ord red to active dury Septembe 1954 died 22 May 1955 age 25 at his home of lymphoma
- VIESES Thadeus Captain MC USAR New York N Y Med cal Detachment 841st Engineers Advanced Battalion Beale Air Force Base Scarwaf Califa, graduated in 1950 from Ludwig-Maximilians Universität Medizimische Fakul tat Munich Germany Appointed a first lieutenant 3 June 1933 ordered to active duty 4 J nuary 1955 died 30 April 1955 age 30 at Bakersf eld Califa, of injuri 5 received in an automobile accident.

PRESIDENT SPEAKS AT AFIP DEDICATION

President Eisenhower was the k ynote speaker t the dedication of the new home of the Armed Forces Institute of Pathology on 26 May 1955

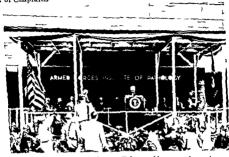
While hundreds of spectato s including prominent scientists and gov ernment and military officials looked on Secretary of Defense Charles E Wilson introd ced th Pres dent who said I dedicate this hold ing to the conquest of disea e so that mankind more safe and secure in body may more surely advance to a widely shared prosperity and an en during and just peace



The Secretary of Defense was introduced by Brig Gen Elbert De-Coursey MC, USA Director of the AFIP who noted that the Institute is the central pathology I boratory for the Veterans Administr ton in ad dition to the three armed services. The Public Health Service and the Atom c Energy Commission as well s civilian institutions and individ uals are also served by this umque organization.

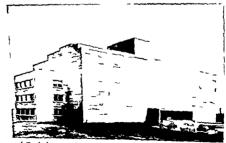
Among those present on the speakers platform were Maj. Gen. How rd M C. Snyder MC USA (Ret.) the Pres dent's physician Maj Gen. George E Armstro g MC USA returing Surgeon General of the Army Rear Adm Bruce E B dley (MC) USN Deputy Surgeon Gener I of the Navy Wal Gen. Dan C Ogle USAF (MC) Surgeon General Air Force Mar Gen Leonard D Heaton MC USA Commanding General of Walter Reed Army Medic 1 Center Capt. William M Silliphant (MC) USN nd Col Ralph W Thompson, USAF (MC) Deputy D rectors of the Armed Forces institute of Pathology

The invocation was given by Maj Gen Patrick J Ryan USA Chief of Chaplains and the benediction by Rear Adm E B Harp Jr USN Chief of Chaplains



Secretary of Defense Charles E. Wilson addressing the audience.
The President and medical officers are seated on the platform.

A scientific program opened that evening with an address by Dr Wendell M Stanley a Nobel laureate in chemistry and was followed the next day by sessions presided over by Dr Arnold R Rich, Pto



fessor of Pathology Johns Hopkins University Medical School and D... Howard T. Karsner Research Advisor to the Surgeon Gene al, L. S. Navy

(The history and organization of the 4FIP was recently described in this Journal Vol. 6, pp. 221 231 Feb. 1955.)

MAJOR GENERAL SILAS B HAYS APPOINTED ARMY SURGEON GENERAL

M for General Silas B. Hays was sworn in s the 30th Surgeon General of the Army on 1 June 1955 succeeding Major General George E. Armstrong who retires in August after more than 30 years of service

General H y was born in St Paul Minn 18 February 1902 In 1928 he received the degree of doctor of medicine from the University of Iowa After serving in Army internship at Letterman Army Hospital he was commissioned First Lieutenant Medical Corp in the Regular Army 1 August 1929



Maj Gene I Sila B. II ys, I ft o a Surgeo Gene al fib A my by M per G ne al f b A N n, Tb Adj tant Gene I U. S. Army. Tb cereporty a beld Wa burgt n, D C o 1 f 1955

General Havs sag duate of the Medical Field Service School and the Army Industrial College. He served two tours of duty with the Supply D vision, Office of the Surgeon General W shington, D.C. and during World W: II he ws Chief of Medical Supply European Theater of Operations. In May 1950 he ws assigned as Surgeon U.S. Army Pacific and later as Surgeon J pan Logistical Commonduntil he became Deputy Surgeon General in August 1951

He is a membe of n merous medical organizations and has been warded the Legion of Merit the Leg n of Merit with Oak Leaf Cluster the Cox de Guerre with P lins and the Order of Sante Publique from the Republic of France

Reviews of Recent Books

PRINCIPLES OF INTERNAL MEDICINE edited by T R Harrison Raymond D Adams Paul B. Reeson, Will am H Resnik George W Thorn and M M. Wintrobe 2d edition 1703 pages allustrated. The Blakiston Co Inc New York N Y 1954 Price \$16.

Those familiar with the first edition of this book are already aware of the unique and highly desirable method the authors used in the presentation of diseases of internal medicine. They were most successful in integrating pertinent aspects of preclinical sciences with clinical medicine by using modern methods of describing the mechanisms and physiologic and structural abnormalities as they relate to disease

This edition has retained the general arrangement of the first edition presenting in order the cardinal manifestations mechanisms specific infections and infestations and finally the diseases of the organ systems. Each chapter has been revised or rewritten. Two new sections enhance the value of this text. One is a section of 15 chapters on disorders of nervous function containing material that is not readily available to most students. Another concerns the care of the patient in which general principles of therapy have been grouped together. They deal with such problems as sedation control of pain nutrition shock fluid and electrolyte therapy the comatose patient and other conditions which may be observed in many seriously ill patients regardless of the diagnosis.

This volume is encyclopedic in scope and of necessity does not in clude details on many subjects. Attention is given to the more common conditions. The bibliography is not extensive but adequate and the charts and illustrations are excellent.

This book should become indispensable to medical students post graduate students of internal medicine, and practicing physicians as a ready reference to diseases and their various manifestations. It is lighter and easier to handle than the first edition even though it contains an additional 150 pages—DOSS O LYNY Col. MC USA

THE YEAR BOOK OF DRUG THERAPY (1954-1955 Year Bork Series) ed ted by Harry Beckman M D 592 pages illustrated The Year Fork P to lishers Inc Chicago III 1955 Price \$6.

This book reviews the important contributions of therapy in the last out fields of medicine. From many medical journal, published triping out the world during the period of August 1953 to Juguar 1954 adjaces important articles which bring out new idea, of treatment he is held abstracted.

The editor in his preliminary introduction prevented on appelled 1/11 all review of the scope of the beak. Then d noting the 1/11 is util

into the various fields of medicine he reviews the important contributions adding his own pertinent remarks as footnotes to many of the articles. By listing the source and author of each article the editor enables the reader to refer to thought article should the full details be desired.

In addition the subject of annihiotics and sulfonamides is thoroughly reviewed Considering the volume of literature published on this subject alone and the numerous new annihiotics available for use the reader is given an excellent summary of this ubject

For the busy practitioner whether or not he is a specialist whose time for reviewing current literature is limited this book provides a most valuable source of information as to current treatment in a concise condensed I m. Although subject to some criticism. Is to what is considered important the author must be congratulated on the excellent selection of articles. The various illustrations charts and graphs add materially to the value of the book and make it ideal for quick reference and one that should be in every practitions; silvation.

-- DANIEL I WALIGORA COL MC USA

CLINICAL DIAGNOSIS by Elm G. W k / ld M. D. F. A. C. P. 1.611
P. R. 135 | Ilustration | Appl. on-C. t.ry Croft | I. N. W. Yo. k.
N. Y. 1955 Pr. 522 50

From his extensive clinical experience the author pres nts tme tested t chinic and diag ossuc method used at the Mayo Clinic Becaus of the broadness of the subject mitter the book is divid d into three sections covering regional d gno is the systemic discussed in the book by permitting e sier reference to the t pographic area or system roubsed.

In each section condition are discussed affectually for the reclinical diagnoss. Normal as well as abnorm I of incal findings are described in adequate detail. Technics used by specialists such a endoscopy and special laboratory det miniations, and complete differential diagnosis are not included. The author at test in the preface that a physician can m ke the diagnosis in 7 our of 10 cases by use of his own sen es and experience aided, I necessary by refer noe to this bool- and that the diagnosis in the other three c ses depends on rechnical used by specialist.

This is just the book needed to pplement standard textbooks of internal med cine because with its use the diagnosis in most parents can be mad without especial taboratory determing to one

The book is written in a cl r concise and easily re dable style. The illustrons re good and su table references are given a rend of each chapter. Although the diagnostic criteria of common swell as uncommon dis as a are included careful indexing mikes this an invaluable reform to book for the intern resident and practicing physician.—PATRICAL PRIMINE CA MC USA.

Christopher's MINOR SURGERY edited by Alton Ochsner M D and Michael E DeBakey M D 7th edition 547 pages illustrated W B Saunders Co Philadelphia Pa 1955 Price \$9

The editors and 21 contributors have given us a new Christopher's Minor Surgery Those familiar with the sixth edition printed seven years ago will not recognize this new product as their old friend. The present work is one half the size of the old is the product of many contributors representing different surgical specialties but with similar academic backgrounds and is organized in an almost completely different fashion than the older edition.

The material is grouped according to systems and each has subdivisions representing the various categories of conditions

Though the problem of definition still is not solved to everyone s satisfaction the editors state it is suggical therapy of lesions offering little or no potential threat to life and which may be treated with the patient on an ambulant status. Most contributors limit their presentations to minor surgery. In the section addressed to The Surgical Resident a wise analysis of and fine approach to the code of behavior and position of the student surgeon is made. This section alone would make the book worth while to a resident and young physician.

Excellent technical descriptions of examination of the rectum hand ling of mechanical injuries and thermal injuries (though without reference to the work done at Brooke Army Hospital) and diagnosis of peripheral venous diseases are found infections are considered with such completeness that rather uncommon surgical problems such as leprosy anthrax and others are included

By and large the volume is a good one an improvement over the older editions a fair reference work for office practice and good for the student and tesident. It is a valuable work for any physician's library and should take a place with other standard texts

-- DON'S WENGER COL USAF (MC)

CURRENT THERAPY 1955 edited by Howard F Conn M D 692 pages
W B Saunders Co Philadelphia Pa 1955 Price \$11

This new volume is one of the best publications on current therapy It contains information on the latest approved methods of treatment for the practicing physician. The objective of the author has been to bring to the physician information necessary to the complete management of the patient

The material is presented in well organized vections covering diseases of various systems. The index is excellent. The description of treatment is narrative in form and is clearly presented. Consultants and contributors to thus publication are in most instances well known for their ability and outstanding work in their fields of special interest which lends additional credence and reliability to the contents of this book For some diseases the methods of treatment of more than one climician are described and usually represent different vers of therapy premised on different concepts of the disease. The views expressed by the contributors are presented by the author in an unbiased manner.

As a ready reference it is one of the best volumes of its kind that has been published recently. It will be well received by both the general practitioner and specialist alike as being of material assistance in their practice—CHARLEST YOUNG COL. MC USA.

MODERN OCCUPATIONAL MEDICINE dited by A, I Fi m g M S M D d C A D Al M D. 414 pg 44 ill trat 2 1 r 32 tabl L & F bg Ph I d lph P 1954 Pr \$10

Among the 20 contr butors to this book are 12 physicians including med c l administrators p ychiatrists and a surgeon also contr butine re a toxicologist an industrial hygienist a nurse a nutrit onist a physicist a s f ty eng nee and a lawyer The breadth of the coverage of the subject of occupational medicine is matched by its thoroughness and authenticity Particularly stimulating are the forthright questions n the first ch prer The Evaluation of Ved cal Services in Industry asked of the plant physician. Equ Ily searching qu stions are addressed to the plant m nager both to go e him a yardstick for evaluating his medical program and to indicate the support he must give his medical department in terms of staff equipment supplies and stature in order to ensure its max mum effectiven as In setting the standard for the staff ng and equ pping of the medical dep ren ent the authors recommend a rat o of one full time physician per 1 000 employees which would appear a bit high fo most nonchem c 1 ind stres Conversely and sur prisingly their rat o of one full time nur e for a group of from 300 to 800 employees a lower than that generally recomm ded for industry The ratio of physic ans to employees and the list of equipment recom mended by the authors e g basal met bolism and d thermy equipment for plants with as few as 1 000 employees imply a belief thit industrial medical departments should render services particularly diagnost c serv ces beyond the scope recommended in the Guiding Principles of Occupational Medicine issued by the Council on Industrial He 1th of the American Medical Association.

A most luc d and helpful exposition of the prictical application of psychiatry to industry is given which appropriately ends with the state ment, effective discipline promotes mental health. Through the disciplines of chemistry physics radiology ophthalmology orology for cology physics ology psychology by attrictive and engineering the groundwork is lad to permit the el-horation of ritional measures for the prevention detection diagnosis and treatment of mental and physic logame and functional occupation litiness and to permit the determination of the proper scope and procedures of medical examinations for detecting the earliest manifestations of such illness and pointing the way to corrective action. The alle of the book to the plant physic an would have been enhanced high different approach after laying this grund

work included a detailed schedule of medical examinations for employees exposed in their work to each of the several substances and influences capable of impairing health Likewise helpful to the plant physician would have been a critical examination of and guidance with respect to certain practices of dubious merit carried on by some in dustrial dispensaries such as the routine physical checking of all employees returning to work after being absent on sick leave and the operation of a visiting nurse service

The book is well organized indexed and illustrated The bibliography is extensive with references to what appears to be the most authoritative literature. In my opinion it is the most complete authentic helpful and practical book that has appeared in the broad field of occupational medicine. It should be available to all who are engaged in or concerned with this field—B DIXON HOLLAND Col. MC USA

NORMAL LABOR by Leroy A. Calkins M D Ph D American Lecture Series Publication Number 246 A Monograph in American Lectures in Gynecology and Obstetrics Edited by E. C. Hamblen M D. F. A. C. S. 128 pages illustrated Charles C Thomas Publisher Springfield III 1955 Price \$4

This monograph is a collection of papers each of which deals with a facet of obstetrics that has long been controversial. It is not intended as a textbook but rather as collateral reading for those advanced in experience and knowledge of obstetrics. The book is written from the vantage point of some 30 years of rich experience and careful observation by an author who has evaluated the currently accepted methods and without hesitation given his opinion as to their value. This opinion is backed by carefully kept records of cases sufficient in number to cause critics to be slow in contradiction.

Interwoven through this discussion, are the author's own proved and adopted methods as well as those used in other well known clinics. Criticisms of technics (his own as well as others) are freely given as well as reasons for the criticisms. The point is made that we have not yet learned everything about obstetrics and that our statistics are not yet perfect.

There is a detailed set of tables and methods to be used in predicting the length of labor by stages. This is rather a simple form of predicting length of labor and well worth the specialists careful study and use. Whether the average general practitioner would use it in his practice is subject to question. The final essay on the management of the third stage of labor is well worth reading by anyone doing obstetrics whether in large clinics or in the hinterlands.

This small book is well organized readable and sure to be intensely interesting to obstetricians. Reflecting long years of study and careful evaluation of adequate records it gives the reader the benefit of an excellent teacher's experience—ROY'S TANDY & Cond (MC) USV

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A PRACTICAL MANUAL OF DISEASES OF THE CHEST by M MD 4th duon Ofod Md al PN at 647 pg a 11 strtd. Oxfed U esty Ps NwYk NY 1954 P \$1925

During the past decade the advent and almost universal application of antibiotics has all but transformed the medico-surgical approach to pulmonary disorders. The clinical picture of many lung diseases has been so ere thy modified that the doctor who stood still for the past 20 years would find himself ent rely unfamiliar with modern concepts of altered physiology and their therapeutic implications

This fourth edition of Davidson's celebrated account of fundamental principles presents an extensive revision of clinical concepts of pul monary dise ses in the light of modern chemotherapy but there appear to be two rather glar no deficiencies. First the treatment of the anat omy physiology and chemistry of the respiratory mechanism is 100 sketchy and ephemeral Second throughout the extensive description of clinicopathologic aspects of diseases of the chest, the majority of references hark back to 15 or 20 years ago In a sense then the author has presented an unusually thorough treatise on thoracic med cine based primarily on an atraordinary clinical experience over the past quarter of a century His practical concepts are sound and conservative since they re b sed on clinical trial and error yet by the same token they all but ignore the ad ent of recent advances in phys ology. One looks in vain for any ment on of pulmonary function tests for an adequate discuss on of pulmonary insufficiency for st ndardiz tion of defini tions and symbols in respiratory physiology and for an accurate pres ent tion of the normal and bnormal functions of the lung

If the correlate n and interdependence of altered physiology and clini cal d sease states were empha ized this treatise would be outstanding as a shining example of the axiom. The physiology of today is the medicine of tomorrow -CHRISTOPHER C SHAW Cool (MC) USN

SURGERY OF THE ADRENAL GLANDS by Will am Waller Scott M D
Ph D and P rry B Huder m, M D Anne c L tur Sen Publ
toon Numbe 227 A M g ph a Am n L ture in Abdomin I
Vi e d d by L t R. D g t dt M D 150 pg s 11 st t d.
Ch 1 C Thomas P bt h S pm [d idl 1] 1554 Pt c 33 of

Modern concepts of normal and abnormal adrenal function are still in a state of flux and many surgical procedures are aw iting the test of thre before acceptance. This monograph presents a good review of present-day opin one regarding surgically amen ble lessons of the adrenal glands Controversial viewpoints are not discussed but the reader is referred frequently to the excellent b bliography that ac companys the monograph

The first thre chapters deal with the de elopment structure function of the drenal glands. That on function is ill strative of the prese t-day confusion o the subject but some eff it is made towa d simplification. The re of the volume is devoted to tumors of the adrenals using both anatomic and functional classifications—ell illustrated case histories are presented to describe each type. Surgical procedures are discussed with brief comments on bilateral adrenalectomy in the treatment of disseminated cancer of the prostate and breast.

This monograph is well written and is recommended reading for both internists and surgeons—I EWIS L. HAYNES Comb (MC) USN

ANTIBIOTICS AND ANTIBIOTIC THERAPY by Allen E Hussar M D and Howa d L Holley M D 475 pages The Macmillan Co New York N Y 1954 Price \$6

This book is a compilation of information about the various antibiotics in clinical use and is divided into three sections the fundamentals of antibiotic therapy a description of each antibiotic and the treatment with antibiotics of various diseases. This results in considerable repetition but is necessary for its use as a reference.

The first section contains much interesting information on the possible mode of action of antibiotics but the sum total only shows the truth not yet revealed. The second section discusses individual antibiotics dosages toxicity and reactions. The third section may cause many readers to disagree with the authors who seem much more optimistic about the use of antibiotics in certain diseases than does the reviewer

There are inconsistencies in advocating combinations of aureomycin (page 298) and penicillin but later (page 306) stating they are antagonistic. It is interesting that the first of these drugs to be put to common use is still the most useful — JAMES L. TOBIN Col. USAF (MC)

A CIBA FOUNDATION SYMPOSIUM ON THE KIDNEY edited by A A G Lewis M D and G E w Wolstenbolme M B 333 pages with 125 illu trations Little Brown & Co Boston Mass 1954 Price \$6.75

This small volume records the full verbatim proceedings of an international symposium in London under the auspices of the Ciba Foundation. The subject matter is discussed in five general parts structural and functional relationships in the kidney tubular functions other than the regulation of acid base balance renal share in the regulation of acid base balance routed of body fluid and general problems of electrolyte excretion. The book contains 20 articles and each one has its own bibliography. There are many illustrations and charts of high caliber. Indexing is adequate the quality of the printing is pleasing and the volume is well bound.

This publications objective is to make available throughout the world the proceedings of this symposium which was necessarily restricted in membership A wealth of valuable material is presented which will be informative and stimulating to all interested in the kid ney in health and disease. This book has limited clinical application at the present however it informs the teader of the varied and complicated measures and methods which are being carried out in investigation of the kidney—CLARENCE BRENTT IL Col MC USA

ANIMAL AGENTS AND VECTORS OF HUMAN DISEASE by E ne 1 C m II F st Ph D 660 page 216 ll tr tr s d 9 plate 1 in col 12 mbl L & F b ge Philad lph P 1955 Prc \$9.75

The author well known in the fields of parasitology and tropical medicine was among the first in America to offer a parasitologic text that was accepted and used widely by the medical as well as by the zoological professions. This new book is presented in the clear and well-organized style characteristic of his previous works. Although emphasis is on parasites consideration is given to all of the common so-called animal agents that cause disease in man These rance from the viruses rickettsias protozoa and helminth parasites found within man to the various arthropods leeches poisonous mollusks and dangerous fishes and reptiles which may have venenating or more serious effects upon man-

The over all value of the book is greatly enhanced by synoptic tables th t give the reader immediate access to a volume of pertinent infor mation Students interested in the more basic aspects of parasition dise ses will find tables giving taxonomic groupings of the agents of disease means by which they are tr namitted vectors involved reservoir h sts et cet ra all of which contribute to an understanding of the epidemiology of the diseases in concern. Cle r line drawings ch rts and photographs illustrate various aspects of infection. The physician will find accurate descriptions of all the common parasitic diseases and tables that clearly present the p thologic effects and clinical manifestations produced by each organi m. Appropriate attention also is given to the contr I and preve tion of disease Each ch pter ends with a summary and bibliography which permit the read r to grasp at a glance the highlights stressed for given subjects and list the more important and relevant references from the literature

This book covers the etiology epidemiology symptomatology treat ment and control of diseases resulting from infection by animal par sites it is highly recommended for use by parasitologist pathologists practicing phys cians and workers in preventive medicine

-- PORERT E KUNTZ LI C mit (MSC) USN REGIONAL ALLERGY of th U td St t Ca d M co d C b ditd by M S mt M. D and O e C. Durbona. Ann n Lect Set P blicets Numb 224 A M g ph th B nn t D si f Am c L tu n All gy did by M S mt M D 395 pg 11 td Ch 1 C Th m s, P bli h Sp g Id III 1955 P

The book provides much needed reference especially in an allergy clinic where inquit es are often m de as to whether or not cert in chil dren or patients would do better in other sections of the country Taking in Il the sections of the United States as well as Cub Mexico and Canada and written by outstanding allergists in e ch pa ticular secti n of the country it would come in very I ndy in any allerg it's office The different conditions existing in these areas they would affect in

allergy patient are discussed mornighty. Not only are the geographic pollen count and fungi counts given, but also a resume of each area including the social structure the particular business conducted in the area and whether or not there is any ourward manifestation of smoke or sing and a short immoduction on the geography and natural resources of the particular area condensed.

I found the book very interesting believe it will be very useful and recommend i highly especially to any allergist whose patients travel to other arras of the country either of necessity or for pleasure. It would be especially useful at a military installation, where because of transfers flequent inquiries are made about conditions at new statuous.—AFTPUR J BERGER, Lt. Col., MC. US.

ORAL PATHOLOGY by Kurt F Thomas D M D 4th edition 1536 pages with 1594 illustrations inclinding 92 in color The C. V Mosty Co St. Louis Mos. 1554. Price \$22.50

This is the fourth edition of a well-established volume in the field of oral pathology. The most noticeable revision is the deletion of the chapter on experimental pathology. The important segments of this chapter have been placed in appropriate positions in the remaining text.

The forma and style are essentially the same and there is some expansion to incorporate recent information. The illustrations abundant by used are well chosen. The discussion of odon ogenic tumors is excellent as is the interference to odontogenic cysis. The text is encyclopedic in scope and will be a welcome addition to the libraries of oral surgeons general pathologists oral pathologists and otolaryngologists.

This book has no equal as a reference book in oral parlology. The author's amproach to many of the pathologic enlitters seems to be primarily that of a clinican rather than a pathologist which should increase the usefulness of the work. One of the greal metric of this book is the vast biolography which has been revised in this edition to include recent publications—JOSEPH L BERVIER, Co. DC LSM

BLOOD GROUPS In MAN by R P Pace Ph D and Puth Sanger Ph D 2d edition 400 page linstrated Cha le C Thomas Publisher Springfield III. 1954 Price \$7.50

The first edition of this work, published in 1950 was acclaimed at the Third Congress of the International Society of Heriatology in Cambridge University. Prior to that time to book on this subject had been so complete so ca efully documented and so well written.

The new edition will be welcored with the same friendliness that was shown the older one. The book has been thoroughly revised. The 100 pages added represent the great amount of work thas has been done in the field of human blood groups during the past four years. The format remains the same Fach blood group system is discussed in the

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order of its discovery and a chapter has been added on the new ninth blood group system Kidd There are also chapters on blood groups and linkage and methods used in blood group ng Much of the expansion has taken place in the imp tt nt chapters devoted to the ABO and Rh blood group systems

The development of the hum n blood group systems is at the present time an intensely dynamic s biect. It is well known that conflicts regarding the interpretation of data h we developed it may be many vears before these conflicts can be resolved Not least among the merits of this book is the fair and dispassionate manner with which the authors have dealt with these di putes. One hopes that their exmple may be emul ted -WILLIAM H CROSBY IL C I MC 1154

THE YEAR BOOK OF RADIOLOGY (1954 1955 Ye Book Se) Rad 1 gc
Diag edt d by Job Floyd H it M D d F d J r Hodg
M D Radist Th rapy dt d by H rold H J M D d Mort M kigerm n M D 432 pag li trat d Th Year Bo k Publi hers In Cheag III 1954 P \$9

This yearbook has two sections. The abstracts of articles in the radiologic diagnosis section are concise and well chosen Many are accompanied by excellent photographs. The editors as usual often add worth while comment The chapters on the chest and gastrointes tinal tract are extensive and represent an excellent review of the litera ture The section on r diation ther py presents interesting articles on the use of x ray radium and radioactiv is topes in both malign nt and nonmalignant lesions and includes brief chapters on physics dosimetry treatment technics hazards injurie and radiob ology

The editors are to be complimented for the excellent preparation of this book It will be a valuable ddition to every radiologist s library -R. I HEALY C I MC USA

A TEXT BOOK OF MEDICINE FOR NURSES by E N ble Ch mb la M D 492 pge ll rat d 6th di Ofrd U ty Pre N w Y k N Y 1954 P c \$7 50

This excellent compilation of inform tion rel ting body structure and function in care of patients with common diseases was written for nurses and emphasizes the nursing aspects of medicine. It is also a valuable reference for graduate nurses who need a review or nurses studying for state board examinati ns. The summary of acute inf ctions listing causes symptoms and treatment serves as a study guide as well as a quick reference. Few text contain such correlation of diet and drug ther by in conjunction with physic logy

All illustrative material was carefully selected Illustrations clearly emphasize various points and greatly enhance the value of the text

The author fulfills the need for such a publication for nurses and has put forth a great deal of effort in compiling the material to satisfy needs of both student and graduate nurses

THE MANAGEMENT OF ENDOCRINE DISORDERS OF MENSTRUATION AND FERTILITY by Georgeanna Seegar Jones M D American Lecture Series Publication Number 206 A Monograph in The Bannerstone Division of American Lectures in Endocrinology edited by Willard O Thompson M D 198 pages illustrated Charles C Thomas Publisher Springfield III 1934 Price \$5.75

This book is written for medical students as well as for the special ist or practitioner and is intended as a fully informative discussion of all the theories and possibilities of endocrine functions and disorders It presents in a clear concise manner the terminology and chemical composition of the hormones describing methods of assay and physiologic functions. There is a brief summary at the end of most of the charters.

The first three chapters are perhaps the most valuable in the book although the last chapter is an excellent review of hydaridiform mole and choriocarcinoma. There is an excellent bibliography and index

The author is to be congratulated on using a terminology which is in general more explanatory of the function of the hormone and less confusing than is the case with many other works on the subject

This is a well written book on the gynecologic hotmones by an author who has a thorough understanding of the subject and who realizes that too detailed a work would in all probability be out of date before it came off the press. The book is recommended as a necessity for the library of all those interested in this subject.

-PAUL PETERSON Capt. (NC) USN

PEDIATRIC DIAGNOSIS by Morris G en, M D and Julus B Richmond M D 436 pages W B Saunders Co Philadelphia Pa 1954

This book presents an entirely new and interesting approach to the pediatric patient when compared with the usual texts. A disease entity is not discussed as such rather signs and symptoms of disease as well as expected normal findings at various levels of growth and devel opment are considered. The introduction includes a section on history taking which reveals the author's orientation in the psychiatric technics of obtaining significant information by indirect means. The section on signs and symptoms is the heart of the book and concerns indications of disease of every body part and system. By design the book does not contain all information concerning a certain disease however extensive references have been incorporated in the body of the text. The section on physical examination describes normal findings and clearly indicates the significance of pathologic signs. The final section on preventive pediatrics is in accord with the other sections in integrat ing the physical psychologic and social aspects of child care.

The undergraduate student probably will not find this book satis factory to his needs however the postgraduate practitioner of pediatrics will find it interesting and broadening and helpful in developing his approach to the child as a whole —OGDENC BRUTON COL MC_USA

1086

BONE An Int od t n t th Phy 1 gy f Skelet 1 Ti sue by F kl C
M L Ph D M D a d M b ll R U t M D 182 pag llus
tr t d Th U ry f Chic g P Ch cag III 1955 P e \$6

The authors consider bone as living tissue with a dynamic relation ship to the fluid comp rements of the body rath r than as m rely a supporting structure The text is well orga ized starting with a con cise description of bone tissue and a brief but thorough discussion of its histogenesis A firm foundation is laid with clear definitions nd a presentation of the terminology used in the recent liverature Following in sequence are chanter on tructure and chemical compos tion of bone matrix chemistry and crystal structure of bone mineral and dyn mics of calcification. The status of present knowledge of the part played by enzymes in the metabolism of both organic and mi ral components of bone is summarized although more questions are rused than an wered Sim larly the direct and indirect effects on hone physiology of the various hormones are shown to be poorly understood and the need for further nyest a tion in this field a made clear

One chapter a devoted to the metabolism of radi active elements as rel ted to the skeleton and includes a table summarizing informat on on those fission products with known affinity for bo e. An ther useful table shows the number of days som of these isotopes are retained in bone

The chapters on postfetal o reopenesis and healing of fractures explain clearly the means by which osteogenetic potency ex is in connective tissue in sites other than bone and the w v in which the factor inv lved in o teop nesis operate in the healing of fractures The pathologic phys ology of bo e is briefly and comp tently discus ed in the final chapter

This book should provide interesting and informative reading for general practitioners internists surgeons and medical students and sh ld ce t inly be thought p ovoking for the orthopedist and physiol ORIST -HAROLD E SHUEY LL C L MC USA

THE DISTRIBUTION OF THE HUMAN BLOOD GROUPS by A E M w i
D M 438 pag il tr t d Ch l C Thoma P bli h r Spr gfi ld

Deriving anthropologic and genetic interpretations from the extensive world wide knowledge of blood groupings this work develops the demographic usefulness of nherit d blood factors. It fulfills the author s objective to bring togeth r as much a possible of the information given by the blood groups on the relationships between the different divisions of the human r ce

The first part of the text describes the principal characteristics of the nine most significant systems of blood grouping from the ABO series through the Rh to the less known or less constant P Lutheran Kell Duffy and other systems In ddition other genetic character

is a same introduced such as the various types of hem whom (A C D E G and S), and the abilities to taste phenylthic, indumine and to smell hydrocyanic acid

The topographic distribution of the various blood types of the several systems is covered in seven chapters. A few examples are the high Leidings of the B gene in people of eastern Filope the absence of B in all American Indians (but not Eskimos) and of A as well in South Americans, and the low frequency of the M and the high incidence of the Duffy (Fy³) gene among the Lapps of northern Scandinavia Finally the blood groupings of tissue specimens of animals are discussed and instructions for collection of samples are given Pethaps most interesting are the chapters "An Attempt at a Synthesis with its suggestion for time tresearch and "Some Recent Di coveries which brings the rades up to date Medical interest is stimulated by mention of the proved increased susceptibility to carcinoma of the stomach by prisons with group A over those of group O and the presumed resist ance to malatia of persons with the sickle trait of thalassemia

There is a bibliography of 1716 references and five maps of the world and foul of Europe showing the areas of distribution of the war was blood group genes. Percentage incidences of the various genes in lin-rally chousands of persons tested from all portions of the world are provided in 40 tables. There are topographic and zoologic indexes to the bibliography in addition to the general index to the text.

The book is readable contains vast reference information and is a white to this relatively new field in anthropologic research.

PRACTICAL MANAGEMENT OF DISORDERS OF THE LIVER PANCREAS
AND BILLIARY TRACT by John Russell Tusts V D Elliot Opponents W D and contibutors 633 pages 136 illustrations and 7 plates
3 in color 48 tables Lea & Feb ger Philadelphi Pa 1955 Price
115

This book as presented by the authors represents the outgrowth of years of inquiry on problems concerning sundry disturbances of the upper digestive tract. The aim has been to present briefly and concise upper digestive tract as applicable to everyday medical problems. It information which is applicable to everyday medical problems between the subjects are discussed in more detail than are others this Certain subjects are discussed in more detail than are others this especially true of those wherein the author's experience has been succeedingly wide or where information is not generally available in other restrictions.

The book is divided into four sections and an appending The 2 chapters contain much cross reference within the book. Through a cach chapter methods of investigation and diagnosis are discussion and evaluated. Useful charts of differential diagnosis are used what applicable especially in diagnosis of diseases of the large Landon throughout is on medical diagnosis of fragrees. The safety of the conditions discussed are considered in relation

indication for and results obtained by surgical intervention rather than a description of operative procedures. Instructions on cholecystog raphy cholang ography needle b opsy and other di gnost c and labor atory tests as well a therapeut c diet are included in the final section.

The book s complere with an extensive bibliography and may ser e as a handbook and reference book for general practitioner internists gastroenterologist and surgeous on the subject cove ed

-WILLIAM S GEORGE C 1 MC USA

GRAY S ANATOMY OF THE HUMAN BODY by H ry G y F R S 26th d ton dtd by Cb l M yo G M D 1480 pag 1202 llus trat m stly un lor Le & F b ge Ph lad lph P 1954 Pr \$16

This I test revision of the dean of an tomy textbooks might well have been brought out a a centenary edition for 1958 will mark the pas ge of 100 y ars ince young Henry Gray first published his Anatomy That original dition contained 750 pages with 363 figures as compared with the 1480 pages and 1202 illustrations of the present onlines Mo e sgnificant than the doubling in 12e and content his ever is the improved method of presentation now employed. In this respect the twenty surth edution is notably better than even its immediate predecesso of six years ago.

A major advance appears in the rewritten chapter on the peripheral nervous system which has been expanded to the extent of an extr 28 p ges A convenient new outline of the crimal nerves his been added as well a dermatom charts of the upper and lower extremities. In this one chapte 15 illustrations in color from Tondury Angewandte nd topographische Anstomie hav been substituted for les clearly execut diguies formerly used. The autonomic nervous system is par ticularly well described in this edition except that in deciding to restrict the term ympathetic to the thoracolumbar division of the viscerial effectint system the editor his not in sme spots fully revised his terminology accordingly. The more flaw undoubtedly will be remedied in the next true nu.

Throughout the book other improvements are noted Embryology is cribed concisely, and more exclusively for human material Surface anatomy or ented toward physical dignoss peear as the second chapter A number of diagram of micro copic an tomy have been replaced by if wigs of organs or ections magnified only file times Finally there are now many bibliographic references supporting state ments in the text in addition to an imple 1st at the eld of each chapter of other reference for coll ter 1 re ding

This lat strevis on of a time honored text should even more than a lireditions maintain and ugment the popularty Jingen; yed by Grays Andromy—BF AVERY CAP (MC) USN

New Books Received

Book received by the U S Armed Forces Medical Journal are acknowledged in this department. Those of greatest interest will be selected for every in a later issue.

- THE THERAPY OF SKIN TUBERCULOSIS by Gustav Riebl M D and Oswald KOpl M D Translated and revised by Ernest A. St abosch M D Ph D American Lecture Series Publication Number 229 A Monograpl in The Bannerstone Division of American Lectures in Dermatology edited by A thur C Curtis M D 247 pages illustrated Charles C Thomas Publisher Springfield II 1955 Price \$6.75
- STUDIES ON FERTILITY Including p pers read at the Conference of the Society for the Study of Fertility London 1954 Being Volume VI of the Proceedings of the Society edited by R. G. Harr son, M. A. D. M. 151 pages illustrated Charles C Thomas Publisher Springfield Ill 1954 Price \$4.25
- MAN S ANCESTRY A Primer of Human Phylogeny by W C Osman Hill M D F R S E 194 pages illustrated Charles C Thomas Publisher Springfield III 1953 Price \$425
- THE HYPOPHYSEAL GROWTH HORMONE NATURE AND ACTIONS International Symposium sponso ed by the Henry Ford Hospital and Edsel B Ford Institute to Medical Research Detroit Mich, and held at the Hospital October 27 28 29 1954 Editors Richmond W Smith J M D Oliv H Gaebler M D and C N H Long M D 576 pages illustrated The Blakiston Division McGraw Hill Book Co Inc New York N Y 1955 Price \$12
- BONE AND JOINT A RAY DIAGNOSIS by Max Ritvo M D 752 pages 568 illustratuous on 398 engravi g Lea & Febiger Philadelphia Pa 1955 Price \$20
- NEUROPHARMACOLOGY Transactions of the First Conference May 26 27 and 28 1954 Princeton N J edited by Harold A. Abramson M D Sponsored by the Josiah M cy Jr Foundation New York N Y 210 pages illustrated Printed by M dison Printing Co Madison N J 1955 Price \$4 25.
- PHYSICIANS OFFICE ATTENDANTS MANUAL Section for Office Work by

 Henry B. Gotten M D Section for Laboratory Work by Douglas H

 Sp. unt M D 93 pages illustrated Charle C Thom Publisher

 Springfield Ill 1955 Price \$3 75
- CARDIAC AUSCULTATION I cluding Audio Vi ual Principles by J Scott
 Butt ruo th M D Mau ice R. Chassin M D and Robe i McG ath
 M D 111 pages 54 illustrations Grune & Stratton Inc. New York
 N Y 1955 Price \$4 50
- PRACTICAL MEDICAL MYCOLOGY by Edm nd L. ke ney A B M D American Lecture Series Publication Number 248 A Mo ograph in Am rican Lectures in Internal Medicine Edited by Ro coe L. Pull n, A B M D F A C P 145 page illustrated Charles C Thomas Publ sher Springfield Ill 1955 Price \$450

- EXPERIENCING THE PATIENTS DAY AM If rPyh tr H ptal
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 t dat f B t Py bop tb H p t l 214 pg G P P tn m
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- GOOD HEALTH FOR YOU YOUR FAMILY AND YOUR COMMUNITY by NIO S Walk Ph D N th D b LL B Ph D d Gl
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 Ed t d R et u Cl // d L B wrell C ns lt g Ed tor
 415 p g ill art d M Graw Hill B k C I N w Y k N Y 1955 P \$4.75
- THE YEAR BOOK OF DERNATOLOGY AND SYPHILOLOGY (1954-1955 Year B kS) d d by M r B Sul b g M D d Rud I/L B M D 472 p ge 59 ll trat Th Y B k P bl h I Chicag Ill 1955 P \$6-
- FUNDAMENTAL CONSIDERATIONS IN ANESTHESIA by Chal L B t n,
 M D 2d dt 219 pg ll trtd Th M mill C N w Y k N Y 1955 P \$5 50
- LIVING BONE IN HEALTH AND DISEASE by Irv St M D F A C S F I C S R ym nd O St M D F I C S d M t L B ll M D 510 p ge 387 Huser ti I B L pp ot C Ph I d lph P 1955 P \$15
- AN ATLAS OF MUSCULOSKELETAL EXPOSURES by H F M I y M A DMMCh(O)FRCS(EglddCad)FACS
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 N tt M D J B L pp tt Co Phl d lphi P 1955 P \$22.50
- FILIOROSCOPY IN DIAGNOSTIC ROENTGENOLOGY by Ou D t bb g MD whatrd by FkJB II MDFACR 771 pag 888 ll tr 523 fgur WBS d Co Ph 1 d lph P 1955
- MEDICAL EMERGENCIES Diagn d Teatm by F D Murphy
 M D F A C P d f t tho F w d by G g
 M n P I M D 5th d t 603 p g ll trat d F A D Co Phidiph P 1955
- BASIC SCIENCES IN ANESTHESIOLOGY (A Guid f Sudy) by A thur B Tarr MD 2d dt 274 pg Th Lyd Pbl fig C S At T 1955 P \$5
- U S MILITARY DOCTRINE A S dy a d App 1 by Dal O Sm tb Bgd Ge I USAF Fowod by G 1 C 11 Sp 12 256 pgs.
 Pbl hd by Lttl Bw & Co B M cit n wth DII Slan & Pel NwYrk NY 1955 P \$3 50
- ANNALS OF THE NEW YORK ACADEMY OF SCIENCES V 1 m 61 Am 1 Pg 1280 pg 11 Style To War Kenner Control of the Pg 1280 pg 11 Style To War Kenner Control of the Parket Fyllon of the Co-Chamm of Ak Fynkm Fk L M hm d J k L Grem Co It g Edr F be k Fy Am n. 280 pg 11 tt d Th N w Y k A d my ISa N w Y k N Y 1955 P \$3 50
- OPEN FIDER PLEASE Th S y f De t try Okl h m by J Stanl y
 Clark. 391 pg | llust t d U we ty Of Okl hom P Norm Okl 1955 Pr \$5

- SPORTS INJURIES Prevention and Active Treatment by Christopher Woodard 2d edition 128 pages illustrated Published by Max Pariish & Co Ltd London 1954 Distributed by Track & Field News Los Altos Calif Price \$3
- ANNALS OF THE NEW YORK ACADEMY OF SCIENCES Volume 59 Art 5
 Leukocytic Functions by Albert S Gordon, et al Editor Roy Waldo
 Miner Pages 665 1070 illustrated The New York Academy of Sciences
 New York N Y March 24 1955 Price \$4 50
- CEREBRAI, VASCULAR DISEASES, Transactions of a Conference Held under the Auspices of The American Heart Association Princeton N J January 24 26 1954 Irung S. Wright, Chairman E Hugh Luckey Editor 167 page Published for The American Heart Association by Grune & Stratton New York N Y 1955 Price \$5 50
 - ANCIENT THERAPEUTIC ARTS The Fitzpatrick Lectures delivered in 1950 and 1951 at the Royal College of Physicians by William Bockbank M A M C (Camb) F R C P 162 pages illustrated Charles C Thomas Publisher Springfield 111 1954 Price \$5.
 - EVALUATION IN MENTAL HEALTH A Review of the Problem of Evaluating Mental H alth Activities. Report of the Subcommittee on Evaluation of Ment I Health Activities Community Services Committee National Advisory Mental Health Council 1955 Public Health Service Public action No 413 U S Department of Health Education and Welfare Public Health Service National Institutes of Health National Institute of Mental Health 1955 292 p ges U S Government Printing Office Washington 25 D C 1955 May be secured from the Superintendent of Documents Government Printing Office W shington 25 D C at \$2.00 per copy (Catalog No FSZ 22 MSZ/16)
 - PSYCHOCUTANEOUS MEDICINE by Maximil an E Obermayer M D American Lecture Senes Publ cation Numbe 239 A Monograph in the Banner stone Division of American L ctures in Dermatology Edited by A thu C Cut's M D 487 pag s illustrated Charles C Thomas Publisher Spingfield III 1955 Price 89 75
 - THE PLASMA PROTEINS IN PREGNANCY A Clin cal Interpretation by Harold C Mack, M D For eword by N cholson J Eastman M D American Lecture Series Publication Number 222 A Monograph in American Lecture in Gynecology and Obstetric Edited by E C Hamblen, M D, F A C S 118 page illustrated Charles C Thom s Publish r Sp ingit id 111 1955 Price 33 75
 - SOME PHYSIOLOGICAL ASPECTS AND CONSEQUENCES OF PARASITISM d ted by William H Gol 90 pages illustrated Rutge's University Press New Brinsweck N J 1955 Price \$2
 - PSYCHIATRY FOR THE FAMILY PHYSICIAN by C. Kn gbt Ald 1cb M D 276 pages illustrat d The Blakt ton Division McGraw-Hill Book Coluc New York N Y 1955 Pre 2 \$ 75 C
 - CAPRICORN ROAD by Fancos Balsan, Translated from the Fr nch by Pamela Seach 252 page illustrat d Philosoph cal Libra y Inc New Yok N Y 1955 Price \$475
 - PRINCIPLES OF MEDICAL STATISTICS by A B dford H II C B E D Sc Ph D F R S 6th edition revised and enlarged 314 pages Oxford University Press New Yok N Y 1955 Pr.ce 34
 - THE YEAR BOOK OF ENDOCRINOLOGY (1954 1955 Year Book Series) edited by Gilbert S Go dan, M. D. Ph. D. 392 pages illustrated The Yea Book Publishers Inc. Ch. cago, Ill. 1955 Pr. cc \$6

- ETIOLOGY OF CHRONIC ALCHOLISM by O k D th lm, M D 227 pag
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- ANXIETY AND STRESS An I t d pi ry St dy f a L i St u by
 H ld B w tz H ld P ky Sb ld J K rch d Roy R G & 320 pg ill tried. The Blk t D Book Co In NwYkNY 1955 P \$8
- GENERAL PRINCIPLES OF GEOLOGY by J F K k ldy D Sc FGS 327 pg Il t t d Pbl ph l L bt y In N w Y k N Y 1955 P 46
- TREATMENT IN PSYCHIATRY by O k D th lm MD 3d dt n 545 pgs Ch l C Th ma Publ h Sp gf ld III 1955 P 19 50
- RADIOISOTOPES IN BIOLOGY AND AGRICULTURE Pr pl by C L C ma 481 pg llustr t d M Gr w-H ll Bo k C In N w Y k N Y 1955 Pr e 19
- THE MAYO CLINIC by Lucy W ld 2d dt 69 pg ll t ted by R th
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- THE YEAR BOOK OF PATHOLOGY AND CLINICAL PATHOLOGY (1954 1955 Y Boks) d d by Will m B. W im n, M D 486 P ge lluser ted The Y B k P bl h In Ch go Ill 1955 P
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- HYPOTENISON Shock d Cadoc latory F lur by P 1 G # 1 M D
 Ph D 78 pag II tr t d 1 B, L pp tr C Ph I d lph P 1955 P \$2.25
- PHYSIOLOGY AND ANATOMY by E ther M G h m 7 h d c t wt tt and t. 868 pag 430 ii ttt midg 48 i JBLPp ottC Phidlph Pa 1955 P \$5
 - SEXUAL HYGIENE AND PATHOLOGY by J h F Ol en, M D 481 p &c J B L ppin et C Ph lad lph P 1955 P \$10
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FIGURES AND TABLES

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Schistosomiasis and Surgery



August 1955

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UNITED STATES ARMED FORCES MEDICAL JOURNAL

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Monthly Message

The suggestion appeared recently in the Journal of Medical Education that it might be possible for deans and department heads to request deferment from military service for young mon who showed promise in teaching and research in the basic sciences. This is an unrealistic attitude and I direct your attention to an article in this Journal on military medical research

The Medical Task Force of the Hoover Commission has recommended

Each of the three military departments maintain a medical center the components of which should be a hospital a center fit postgr dust education and military medicin and a research in titute occupi d with medical problem identif d with the primary m sion fit hepartment of the primary m sion fit hepartment of the primary m sion fit hepartment of the primary means of the department of the primary means of the department of the primary means of the department of the primary means of the primary means of the partment of the primary means of the primary

There is great opportunity for research in the three military departments this research is unique to the military and much of this cannot be accomplished in our medical schools and teaching hospital centers. These areas include human engineering the physiological problems in aviation and submarine medicine and problems of deceleration and escape from high performance air craft. The young man with canability for research is not retarded by his two-year exposure to the military frequently his horizons and imagination will be greatly extended and his civilian medical career broadened and matured or perhaps he may desire to continue the new problems he has discovered during his military ex perience There are some even who hold that the military medi cal departments should do no research. This has been said to me by a senior faculty member of a leading medical school With the Government contributing about 50 million dollars annually to the medical schools for research and also large amounts within the services there is room in both civil and military careers for the young man interested in research. The opportunities for basic and directed research in the armed services are as dignified and worth while as those in civilian fields. I need only remind you of the medical research that has enabled man to keep up with the development of the airplane and the submarine and also to the very fine clinical research by Dr John Howard and his team in the study of the physiology of the wounded in horea based upon a similar study in the Mediterranean Theater in World War II The Physiological Effects of Wounds

FRANK B BERRY M D
A si ta t Decreta y of Defense
(Health and Medical)

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MEDICAL RESEARCH IN THE UNITED STATES NAVY

HOWARD T LARSNER M D

USTIFICATION for the program of research in the Medical Department of the Navy may be found in the answers to three interrelated questions (1) by do research at all? (2) why do biomedical research? and (3) why do biomedical research in the Armed Forces, specifically the Navy? The answer to the first of these arbitrarily separated questions is evident in the early history of mankind the advances were based on trial and error, but the human spirit, as it has developed, has learned that progress is essential progress necessarily dependent on research. This research has been conducted on principles of logical thought and is planned on intelligent hypotheses and ever advancing technics.

The answer to the second question lies in the manifold programs for the maintenance of physical and mental health. The results are shown in the great prolongation of life in recent years. And, as life has been prolonged biomedical research is charged with making it happy, healthful, and productive. The answer to the third question is the theme of this article.

The mission of the Armed Forces is simply stated as "combat readiness" Research in weapons systems is readily accepted as essential because and items are tangible and their purpose well defined flowever the use of weapons systems is largely dependent on the men who operate them, and in the man machine combination the weapon is only effective insofar as the man can do his job Each must be adapted to the other and the greatest variable in the equation is the man A broad concept of military biomedical research covers selection, training, adaptation to strange environments, and preservation of health

Military medicine is more than medical care of military patients. It entails responsibility for discovering new ways and

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reans of prevention and cure of disease and injury It differs from civilian medicine in that it is concerned with military per sonnel in peace and war it must be mobile and it must be prepared to deal with problems which arise in the field whether they be surgical or medical on land at sea or in the air Modern history is replete with examples of how doctors and their associates in military situations have faced these problems and have met them successfully. The control of infectious diseases such as malaria pneumonia and enteric diseases has altered statistics so that those disorders no longer incapacitate the fighting forces. Surgical reasures have vastly reduced the incidence of death and subsequent disability following combat trauma.

It is even proposed that military medicine should be recog nized as a specialty. At the Fourteenth International Congress of Wilitary, Medicine and Pharmacy held in Luxembourg in Novem ber 1954, it was agreed that Military Medicine is a specialty in that it encompasses a group of special considerations as pects or principles poculiar to the needs of the Armed Forces and because it requires of its exponents a unique combination of special knowledge and skills.

There can be no doubt that biomedical research supports the mission of combat readiness and it is a function of the Medical Department to forward this mode of study. It is obvious that war accelerates and augments research. It should be equally obvious that preparation for war is an important objective in peacetime. New situations arise with new types of warfare and research between wars lays the groundwork in two ways. It provides basic and supporting data for studies applied directly to the military needs and requirements. It builds a hard core of investigators with military orientation to be the nucleus of research personnel for expined programs necessary in time of war.

I essons learned during war have many applications in civilian fractice and conversely, research by civilians has aided the military effort. Thus there are interrelations and correlations both ways. However, this does not alter the need for a continuing program of research carried out by medical and ancillary person not in the Armed Lorges.

NAVY INSTALLATIONS

The Bureau of M dicine and Surpers exercises management control and technical control of research laboratories Munagement control includes personnel finances projects and programs Technical control covers medical aspects in association with other bureaus and agencies of the Navy. The Bureau has management control of the Naval Medical Research Institute Bethesda Md the Naval Medical Research Laboratory New

London, Conn , Naval Medical Field Research Laboratory, Camp Lejeune, N C, Naval Medical Research Unit No 1 (NAMRU 1) in Berkeley, Calif NAMRU 3 in Cairo, Egypt NAMRU-4 at Great Lakes, Ill, clinical research in hospitals, and the proposed VAMRU 2 on Formosa In association with other bureaus it has technical control of the research laboratory at the School of Aviation Medicine at Pensacola, Fla the Aviation Medical Acceleration Laboratory at Johnsville, Pa the Aeronautical Medical Equipment Laboratory at Philadelphia, Pa, the biomedical aspects of the Naval Radiological Defense Laboratory at San Francisco, Calif the Naval Biological Laboratory at Oakland, Calif, the Navy Mine Countermeasures Station at Pan ama City, Fla , and the Experimental Diving Unit in Washington, D C The Dental Division has management control of the Naval Dental School and technical control at Great Lakes, Bainbridge, Md , and San Diego, Calif It is unnecessary to catalog in detail the mission of these various facilities, because this has been done by Shaw, but it can be asserted that the objectives are largely in support of naval operational needs as in submarine and aviation medicine studies of acute respiratory diseases of re cruits and defense against atomic and biologic warfare, as well as fundamental studies in physiology biochemistry, pathology, pharmacology biophysics psychology and psychiatry

An example of how operational needs are met is furnished by the program at Pensacola Someone might wonder why the labor atory there conducts studies on such subjects as cosmic rays. molecular structures and lipoproteins These are not shots in the dark but are carefully integrated into the fitness of naval aviators from the time they are cadets until they reach the ages of limited duty and of retirement Studies of psychiatric psychologic and physical factors are essential to forward training and career to select personnel and to evaluate them as they progress Even methods of evaluation and grading require research Cosmic rays may well be significant in high altitude flying Molecular structure is important in the study of explosive de compression. The aging of pilots may be explained at least in part by quantitative determination of special lipoproteins in the blood The causes of attrition are studied with a view to reducing it and its accompanying wastage of time and money

Another example is Operation Hideout at New London Some aspects of this study are still classified but more is now known of the physiology and psychic aspects of prolonged submersion in a submarine than was ever true before. Mention need only be made of the Nautilus to indicate the operational significance. It should be emphasized that studies preliminary to this experiment occupied the attention of the scientific staff at New London for at least three years before it was undertaken At New London

also there have been numerous studies of hearing of vision, of communications of sonar operations all directly applicable to the needs of the Navy Color vision has been an important pre occupation with the aspects of hibitability of submarines and lighting of controls but certain other observations are of the utmost significance for air sea rescue. Only by an intimate knowledge of the physiology of the retima could it have been learned that a modification of the color of rafts and clothing will permit recognition of castaways at sea at preat distances and high plane altitudes.

DISCIPLINES OF MEDICAL SCIENCE

It is appropriate to indicate how the various disciplines and tools of medical science are used. The use of physiology is widespread. Earlier studies in aviation medicine covered the effects of altitude hypoxia orientation visual perception and communication those are being given re examination in relation to high performance aircraft. Other investigations are directed toward effects of acceleration of stresses and the like are being studied as are pressure suits and protective clothing. The facil tites at Pensacola the Aviation Medical Acceleration Laboritos at Johnsville and the Aeronautical Medical Equipment Labor atory at Philadelphia are devoted to intensive work on these topics and their value for the naval aviator is obvious.

The importance to submarine medicine is emphasized by the studies at New London referred to above k qualify significant are the physiologic studies connected with deep sea diving the selection of personnel the gases to be used the importance of compression and the treatment of casualties Several instal lations are concerned including the Experimental Diving Unit and those at New London and key West The use of physiology in clinical investigation is mentioned below

Nuch of the work in physiology depends on physics and biophysics Certainly muscular action and fatigue require an under standing of mechanisms of muscular contraction and the energies involved as well as transmission of nerve impulses. This is an important facet of the work at Naval Medical Research Institute. The development of prostheses for amputees the acrylic eyo the armored vest and the Navy boot represent the fusion of physics and physiology.

Microbiolo, which must be pursued in order to explain outbreaks of disease in the fleet such as dysentery and other microbial diseases both affloat and ashore. The prevention and treatment of these is a part of operational effectiveness. Perhaps as a part of this field is entomology particularly as it applies to vectors of disease. At Bethesda the studies of mesquitoes have

led to methods for the assay of drugs used in suppression and treatment of malaria. Other studies of entomology are applied to transmission of disease and to problems of sanitation

Pharmacology, in the over all sense of management and treat ment of disorders incident to operations in the strange environ ments to which military personnel are subjected, is evidently important Witness the efforts to prevent and cure the bodily changes incident to irradiation injury by nuclear weapons. This cannot be elaborated on because of classification Burns solely thermal or combined with irradiation require rational management Shock from burns, traumatic injury, and exposure requires treat ment by use of fluids, including plasma extenders The Naval Medical Field Research Laboratory and the Naval Radiological Defense Laboratory have conducted valuable studies on glycerol pectate Other extenders have been studied in naval laboratories and hospitals In addition to the physiologic and chemical stud ies of diseases endemic in the Middle East, progress has been made in treatment by means of correction of the fluid and elec trolyte balance, and notably by the use of antibiotics

Pathology is ubiquitous In practically all laboratories and hospitals the examination of tissues serves to identify disorders Furthermore, studies of particular stresses require the back ground of pathology. This covers many fields, from blast effects as at the Mine Countermeasures Station to experiments on the influence of irradiation on mitotic activity as at Bethesda. It seems apparent that studies of irradiation injury, of airborne agonts, of the action of cosmic rays, and like investigations of military significance would be incomplete, and indeed uninform ative, without the aid of the pathologist and his technics

Psychology psychiatry, and related fields have their special mothods. A few of the unclassified projects will indicate the importance to the military forces. Examples are projects on psychologic studies underlying naval problems studies on the etiology prevention diagnosis, treatment, and rehabilitation of neuropsychiatric casualties, the psychiatric evaluation and assessment of Marine Corps officer candidates, an exploratory study of the implications of psychiatry on certain perceptual phenomena and their apparent explanation studies for the purpose of screening potentially neurotic inductees and investigation of requisite personality traits through work analysis of key fleet type billets. Some of these studies are inservice and some are on contract. Psychology and to a certain degree, psychiatry are used daily in the selection of personnel for special duties as for example in the submarine service and in aviation.

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CLINICAL INVESTIGATION IN NAVAL HOSPITALS

Vedical research is not confined to the laboratories nor to specially trained scientists. Support for clinical investigation is now an established policy of the Navy and encouragement in this direction is offered to regular personnel and reserves on temporary active duty including the Medical Service Corps and the Allied Sciences Branch of the Medical Service Corps Clinicians are invited to report interesting well studied cases assemble data on groups of cases evaluate rethods of treatment and study physiologic chemical, and metabolic alterations in disease and injury. Research Division stands ready to analyze protocols and experimental designs so that advice is constantly and readily available to the younger investigators. The same sympathetic co-operation is provided by Publications Division Professional Division and other divisions and personnel of the Bureau

The Metabolic Research Facility at Oakland Naval Hospital has contributed numerous studies of diseased states and has been active in the use of the artificial kidney. The Prosthetics Laboratory there continues its work on preparation of prostheses and rehabilitation of amputees and plans a research program in these special fields. Certain hospitals have extensive programs of surgical research as for example in Norfolk and St. Albana

The Bureau now has plans for establishment of Clinical In vestigation Centers in the larger naval hospitals. In order that these may be a source of pride to the Navy as well as for cer tain administrative reasons a military component is necessary including one or more medical officers assigned full or part time to the center and such other naval personnel as are required in view of current reductions in force and because special knowledge may be desirable there will also be a civilian component of scientists technicians secretaries, of cotera. This combination will assure the Navy of productive research valuable in discovering the cause nature mechanisms and treatment of disease. The Navy will thus take its part in the over all development of modern medicine and surgery.

DENTAL RESEARCH

Dental science and medicine have become more and more close in associated Dontal research is a large segment of the work of the Research Division and the Bio Sciences Division of the Office of Naval Research It has been built to significant proportions by dedicated dental officers. The studies at the Naval Medical Research Institute and Naval Dental School are correlated with those undertaken in various dental field establishments in the Navy and with contracts negotiated by the Office

of Naval Research The Navy takes justifiable pride in the results of investigations of dental carries, periodontal disease, influence of enzymes, relationship of oral conditions to health and technical advances in treatment and prosthetics

PREVENTIVE MEDICINE

Responsibilities of the Bureau and Medical Department in preventive medicine are far flung and research plays a significant part knowledge must be increased in relation to insect and rodent control, vectors of disease, ethology of communicable disease, immunization, and treatment These apply to matters in the fleet and ashore in addition, the Nava is one of the largest employers in industry. Thus, preventive medicine must investigate and test protection against trauma, visual disorders, toxic materials, et cetera its program of accident prevention depends in large measure on factors of cause, accident proneness, and other aspects of the problems

BASIC RESEARCH

The discussion above relates to operational projects and programs in science, however there must be a backlog of funda mental research which cannot be allowed to decrease in prepartion of an experimental design for operational studies, gaps are sometimes discovered in knowledge of essential prits and of technics. Our investigators are often obliged to fill these gaps by what is called supporting research in order to attract and hold investigators for immediate and future needs of the Service, a certain amount of truly basic research must be en couraged and permitted

As C C Little has said, "All progress against disease and death traces back to basic pioneer research." This is the type of research which his broad theoretical importance. It is the seeking of knowledge for its own sake, and many of those who have contributed have not been activated by motives other than increasing knowledge without consideration of its application.

Abraham Flexner' in his article, "The Usefulness of Useless knowledge," emphasizes the fact that basic research is pursued without thought as to application Nevertheless, the whole back ground of our present knowledge of electricity evolved from basic research. The discovery of Herzian wayes was without any fore thought of the remarkable achievements in radio and radar. In my own experience, I have seen the observations of Whipple on regeneration of proteins and blood lead to the control of per nicious anemia and the basic work of Wicledo on carbohydrate metabolism lead to the production of insulin The work on fractionation of complement by Heidelberger by Ecker and others has been applied to the production of highly purified toxoids

and to that remarkable protein named properdin which is instrumental in natural immunity

A few examples from Naval Medical Research Institute are in point. The use of radiogallium in relation to bone tumors was the outgrowth of basic studies on rare metals. The activities of the malarial parasite in mosquitoes were the subject of fundamental studies which in turn have led to a rapid method for assaying antimalarial drugs. The studies on crystal formation in freezing tissues have led to a new concept of the damage in frostbite and give a clue to improved methods of preserving blood for transfusion. Promise of treatment of nerve gas poisoning and of ir radiation injury has resulted from basic studies on acetylcholine and its esterase and on sulfhydryl groups. The devolopment of the treponemal immobilization test rested on attempts to cultivate this organism. Fxamples could be multiplied.

OFFICE OF NAVAL RESEARCH

Without this unique organization medical research in the Navy would suffer serious handicaps A most important function is the support of basic research in universities research institutions and other nonprofit agencies The Office covers the large field of naval research in its various divisions but especially important to the Bureau of Medicine and Surgery is the Bio Sci ences Division with which the inservice research is closely allied Through its many contacts information can often be provided to fill some of the gaps important to the solution of operational problems. It serves the Bureau in making, contracts with extramural agencies for these purposes and for studies to be extremely with those in the Service Research which it supports directly helps build up that backlog, of basic knowledge essential to the program of bjomedical research.

COORDINATION

Various mechanisms are established for coordination, liaison and advice. The offices of the Assistant Secretaries of Defense for Research and Development and for Health and Medical affairs have contributed significantly. The Military Coordinating Committee of the Assistant Secretary for Research and Development meets regularly to coordinate the work of the three Services and to avoid needless duplication. The National Research Council is always available for advice through its committees and sub-committees. Of special importance in evaluation and guidance is the Committee on Naval Medical Research of the National Research Council All members are Navy cointated and some have performed extensive duty in the Navy Rear Admiral Richard A kern (MC) USNR is the Chairman Rear Admiral Minchell McK Craig (MC) USNR is a member, as are also Doctors Eugene F

DuBois, Lee E Farr, Maurice J Hickey, Lawrence C holb, Christian J Lambertson, Joseph L Lillienthal, Jr., Harry Most, Carl Pfaffmann, and Richard E Shope In addition, there are the Honorary Consultants to NAMRU 3 in Cairo, the American members being Doctors Lowell T Coggeshall, Wallace Fenn, and Paul B Beeson The Armed Forces Epidemiological Board is constantly available for information, guidance, and aid Coordin ation is aided by the Bio Sciences Information Exchange and Armed Services Technical Information Agency Authorities in the Army Medical Service Graduate School and the National Institutes of Health, as well as in the numerous scientific activities in the Washington area are generous in their aid The London branch of the Office of Naval Research keeps us aware of research in Britain and Europe Liaison officers in the British and Canadian Joint Services give us valuable aid

PERSONNEL

Those who conduct research are in two main categories Numer ous clinicians conduct research in addition to care of patients, teaching and administration. The second category includes those who devote much or all of their time and energy to investigation with the first group it is in a sense an avocation with the second it is a vocation, "a major social force." This latter group comprises those who recognize research as a way of life and have dedicated themselves to it. The number of clinicians is determined in large part by their own desires and time. The number in the second group is determined by assignment, which in its turn depends on the number of medical officers and others al located by instructions from the Department of Defense At this writing there are 67 medical officers a reduction in the past 18 months of about 40 percent. In dental research there are 11 officers on full time. Seventy one allied science Medical Service. Compositioers give their whole time to research.

The esprit de corps of the \and depends in considerable meas ure on having a firm corps of medical and dental personnel made up of those who, by training, experience, and notive, are dedicated to research. This corps of uniformed personnel can be augmented but not substituted by civilian scientists. However, the research potential of the \any is increased by civilian scientists and there is no reason why this should be changed. The ratio of uniformed and civilian scientists hinges on the number of the former allocated and the number of the latter allowed by civilian ceilings. It varies naturally with the kind of laboratory or other activity.

Medical research in the Navy is still in its youth, it was begun in a major way in 1942 and has grown steadily since that time The man who initiated a broad interest in research was Reyr

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Admiral Harold Wellington Smith (MC) USV and his devotion to it was manifost long after his retirement In an address before the Surgeon General's Conference 16 April 1945 he said Re search is the child in whose hands the future lies. The fruit of his vision is seen in the research activities of the Medical Department in spite of limitation of personnel and funds. The number of research reports is hardly an indication of the quality of the work but we can be proud of the fact that in 1954 349 reports were received in the Bureau some classified and some reproduced for publication in scientific literature

SUMMARY

Medical research in the Navy is essential to the combat readi ness of the service It is pursued in various research labor atories under either management or technical control of the Bureau of Medicine and Surgery situated in the United States and over seas and in naval hospitals it applies to our personnel affeat and ashore The disciplines of biology are used as tools in the solution of problems undertaken in research laboratories or naval hospitals Engaged are uniformed and civilian personnel at dif ferent levels of rank including regulars and those on temporary active duty The studies may be operational supporting or basic as guided by the needs of the Service In addition contributions are made in dental science and preventive medicine Coordination is assured by bodies in the Department of Defense notably the Office of Vaval Research and by quasi governmental and civilian agencies With full recognition of the significant contributions of civilian scientists the maintenance of a strong corps of in vestilators in uniform is of the utmost importance to the over all esprit de corps and morale of the Naval Medical Department

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BEN FRANKLIN ON FREEDOM OF THE PRESS

It is likewise as unre sonable what some assert That Pr nt sought of to pr I any Thing but what th y approve since if all of that Busi ness should make such a Resolution and abide by it an End wo ld thereby be put to Fee Writing d the World would afterw rds have nothing to read but what happen d to be the Opinion of Printers

EXPERIENCES IN CARDIOVASCULAR SURGERY

I Patent Ductus Arteriosus Coarctation of Aorta

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Some OF THE most outstanding advances in cardiac surgery, made during the past several decades, are still new in the memories of most of us Listed in the historic order in which they became amenable to surgical correction are four conditions—patent ductus arteriosus, coarctation of the aorta mitral ste nosis, and atrial septal defect. In addition, effective therapy for the most dread complication of these conditions, subacute bac terial endocarditis is a relatively recent development. These innovations have made the care and management of patients with heart disease a more rewarding experience. A continuing challenge remains, however, in the realization that patent ductus, coarctation, mitral stenosis, and atrial septal defect cause only about four percent of the deaths from heart disease in the United States. The ability of Lillehei' at the University of Minnesota to unhurriedly close ventricular septal defects under direct vision is an exciting development indicating new horizons ahead

Our experience in the surgical correction of these conditions is discussed herein in detail experiences with other operable cardiac lesions are summarized. The diagnosis and management of these patients at this hospital have been accomplished through the co-operative endeavor, not only of the medical, surgical, and radiologic services, but of such other hospital services as anes thesiology pediatrics, and nursing as well

A PATENT DUCTUS ARTERIOSUS

Patent ductus arteriosus is the third most common form of congenital heart disease, exceeded in frequency only by atrial

and ventricular septal defects. It is twice as common in females as in males When the ductus fails to close at birth a shunt of blood from the high pressure systemic circulation to the lower pressure pulmonary circulation usually results. This shunt may reach huge proportions so that as much as 75 porcent of the left ventricular output is forced back into the pulmonary sirculation. Cyanosis is not present except when pulmonary hypertension develops with reversal of blood flow through the shunt and is then often confined to the lower half of the body. Characteristic features are the continuous machinerylike murmur with a thrill in the left infraclavicular area increased pulmonary vascularity. Ninety five percent of patients have the continuous murmur but in the presence of pulmonary hypertension only a systolic murmur may be heard and the diagnosis must be estab lished by cardiac catheterization or other diagnosis must be estab

This lesion is a definite threat to life. The average life expectancy without surgical intervention is between 25 and 35 years. The usual cause of death is subacute bacterial endocarditis or congestive heart failure. Because of the hazard to life from a patent ductus and the low operative mortality surgical closure is recommended for all patients with uncomplicated lesions. Operation is usually deferred however if a child secretation is not seriously embarrassed until he is about four years of age because of the increased incidence of pulmonary complications due to thoracic operation in infancy.

ROENTGENOGRAPHIC FINDINGS

In this condition the most prominent roentgenographic feature is enlargement of the pulmonary artery and left ventricle (fig 1). The enlargement of the pulmonary artery is seen not only proximal to its bifurcation but also in the main branches and out into the lung periphery. This diffaction is caused by the increased blood flow and by hypertension of the lesser circulation. The latter may eventually result in hypertrophy and enlargement of the right ventricle with resulting rotation of the heart and elevation of the apex (fig 2).

The arch of the norta tends to be normal to large in size and shows vigorous expansile pulsation on fluoroscopic examination

Margulis and others pointed out that calcification at the aortic end of the ductus is rarely seen but when demonstrated is diag mostic of the condition. This calcification is ringlike and is in the wall of the aorta.

Goetz was the first to point out that a defect in the pulmonary artery filled with opaque material could be caused by regurgitation of nonopaque blood through the patent ductus. This is referred to as the "jet sign" and is a highly reliable diagnostic sign when found It cannot be demonstrated without fairly high speed angio-cardiographic technic. This may be reversed by forceful injection of opaque media into the pulmonary artery, causing elevation of the pressure to the extent that the die will enter the aorta be have yet to demonstrate successfully either of these highly diagnostic roentgen signs.



Figure 1 Roe igenogram of a patient usib patent ductus a ter o us shouing enla gement of the left vent cle and pulmona y artery in add t on, the e is prominence of the aorta and p imoma y vasc la ma kings

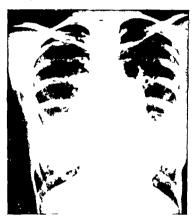
SURGICAL CONSIDERATIONS

Natters of surgical technic usually are sufficiently elementary so that little discussion of them is needed, but in a relatively new field procedure is more important. For operations on the patent ductus, we place the patient either in the lateral or anterolateral position with left side up. Either position is suitable but many prefer the lateral position for adults and the anterolateral approach for children Whether the chest is entered through the bed of a resected rib or through an intercostal space is strictly

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a matter of individual choice, each having its proponents we use either method Exposure of the ductus including its pos torior aspect is entirely by sharp dissection under direct vision

The question of whether to ligate or divide the ductus has been a matter of some controversy Obviously, it is simpler and quicker to ligate but the decision must be based on end results



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rather than on expediency If ligation is done a ligature at each end of the ductus should include the adventitia of the north and pulmonary artery to prevent the force of blood from pushing the ligatures toward the center of the ductus leaving a nipple of lumen on each end This causes return of the murmur even if the shunt is not re established and probably favors development of ve_etations which the operation was to obviate If ligation is used a third central transfixing tie should be used to still further hinder recanalization

Complete division of the ductus seems more definitive and is recommended. The Pott's ductus clamps with angled handle are used and we have not found it necessary to use more than one clamp on each end We obtain length of ductus by pushing the clamps well into the wall of the aorta and pulmonary arteries In case a very large short ductus is found and sufficient length cannot be attained, dissection around the aorta will allow place ment of one of several types of clamps which include part of the aortic wall without shutting off the lumen The ductus then can be divided while a simple clamp is on the pulmonary artery end The ductus is divided with a long knife, leaving more cuff on the aortic side Closure by No 00000 silk sutures may be by simple over and over stitch in one layer by over and over stitch in two layers, the second layer being reversed so that the stitches cross or by a double layer the deep one as a continuous mat tress and the superficial one over and over The side to be closed first is a matter of individual choice Because of lower pressure. the pulmonary side rarely gives trouble and it is well to get this clamp out of the way first

When closure is completed and the clamps are removed, a small gauze square is packed over the suture lines, oozing blood is ignored, and the lung is re expanded. It requires about five min utes for the sutures to reseat themselves in adjustment to arterial pressure, at which time the suture lines are inspected Cozing of blood usually will have stopped Only a spurting area indicates need for an additional suture and, even here, time may cause hemostasis to become complete Several types of accidents may eventuate The least alarming is damage to the recurrent larvn real nerve. This complication can be avoided by care, by sharp dissection, and by maintaining a dry field Sometimes the pul monary end of the ductus will slip back into the pericardium Rapid opening of the pericardium, pressure control of bleeding. and application of a clamp constitute the preferred method of procedure This seemingly simple procedure may require several hours of operating time Tearing of the ductus or excessive leak age at the aortic end is more serious because of the greater pres sure and more rapid bleeding Cross clamping of the aorta long enough to reapply a clamp to the ductus or stump is an acceptable procedure Some operators place an umbilical tape around the aorta primarily so this can be used in an emergency to control the aorta In general, division and suture of the patent ductus is not a difficult procedure, provided the operator is technically competent and performs each successive step correctly and well

RESULTS

Since 1950, 31 patients have been operated on for a patent ductus at this hospital. Three were operated on in 1950, five in

1951 six in 1959 seven in 1953 and 12 in 1954 The average age of the patients operated on was 15 5, sers, the youngest being three vears of age and the oldest 35 The operative pro-cedure consisted of ligation or division of the ductus 17 were ligated and 14 were divided in 1954 all were divided

Of the immediate complications one was intrapleural bleeding which necessitated re-exploration of the chest. This bleeding was found to be from a small apical adhesion and not related to the division of the ductus. One patient in whom ligation of the ductus was performed had a reoccurrence of her murmur about one week following the operative procedure but she was symptomatically improved One patient following ligation of the ductus. was found to have a paralysis of the left diaphragm and another in whom the ductus had been divided had paralysis of the left vocal cord which persisted for two months

Coexisting anomalies which we have found at the time of ex ploration for patent ductus are An aortic pulmonic window and a patent ductus a pulmonary stenosis and a patent ductus and an aneurysm of the left circumflex coronary artery with a patent ductus The patients with the first two mentioned conditions died the first within 24 hours from cardiac failure and the second three months after operation These two patients were not included in the previous series because patent ductus was not their primary disease although they were included in our total mortality figures. The third patient had no treatment for the aneurysm of the coronary arter, and is doing well

The one late complication was a recurrent murmur At reexploration five months after the initial operation, the ductus was divided but no definite lumen was identified. There was no mention in the postoperative follow up as to whether the mur mur had disappeared

The mortality rate from either ligation or division of the patent ductus has been zero in this series of 31 patients

T WAVE CHANGES IN PATENT DUCTUS ARTERIOSUS

Investigators at the Institute of Cardiology in Mexico City4 and elsewhere have written of the electrocardiographic changes in patients with patent ductus arteriosus. The characteristic changes described consist of high symmetrically peaked T waves This is thought to result from diastolic overloading of the left ventricle ard occurs in other conditions associated with diastolic over loading of this ventricle The electrocardiogram in patients with patent ductus is usually read as normal or left ventricular hypertroph. The high peaked T waves do not constitute an abnormality in the usual reading of electrocardiograms

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The electrocardiograms of patients with proved cases of patent ductus arteriosus at this hospital have been reviewed Both pre operative and postoperative electrocardiograms are available for study from 23 of the 31 patents Of these 23, electrocardiograms of 18 were read as "normal and of five as "abnormal" Of the five abnormal readings four were left ventricular hypertrophy" and one was "combined ventricular hypertrophy" The character istic T wave changes were noticeable in the electrocardiograms of 19 patients, or 82 percent of those considered This peaking and increased amplitude of the T waves were not uniform in all electrocardiograms because they varied in degree from patient to

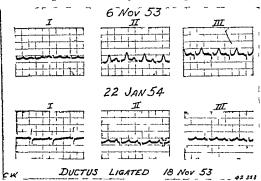


Figure 3 Pre and post-operat e el cirocardiograms of patient with patent ductus a teriosus. The b gh peaked T uaves in leads II and III a e decreased in ampl t de follou ng l gation of the d ctus

patient These findings were seen best in different leads in the electrocardiograms of different patients, and there was no anparent uniformity as to which lead of the electrocardiogram might the characteristic T wave indings These four were women in their early twenties all had normal electrocardiograms and few or no symptoms preoperatively

When the postoperative electrocardiograms were compared with the preoperative tracings the following were noted (1) The peaking and increased amplitude of the T waves reverted toward nor mal in all cases, (2) left ventricular hypertrophy reverted toward normal in all cases and (3) the electrocardiogram of the one

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patient with combined ventricular hypertrophy reverted toward normal following obliteration of the ductus

If looked for the characteristic T wave changes of diastolic overloading of the left ventricle may be seen in a large percentage of patient, with patent ductus arteriosus. These T wave changes revert toward normal following obliteration of the ductus (fig 3)

POSTOPERATIVE CARDIAC CATHETERIZATION

In 1929 Forssmann performed on himself the first human cardi ac catheterization using a preteral catheter passed through an arm vein exposed by a surgeon. Since that time the procedure has become standardized and with the development of improved methods for pressure recording and gas analysis increasingly useful At this hospital the technic has been to expose a suit able arm or leg vein unde local anesthesia in adults or under rectal pentothal (brand of thiopental sodium) analysis combined with local infiltration in children. The usual vein has been the median basilic in the left antecubital space the greater saphen ous vein has proved particularly useful in small children A spe cial protectal type catheter is introduced and advanced through the peripheral veins into the vena cava, the right atrium right ventricle and into the pulmonary artery and distal divisions of the pulmonary arteries Occasionally it is possible to pass the tip of the catheter through a septal defect or into an anom alous pulmonary vein Continuous electrocardiographic monitoring is used and the catheter is advanced under fluoroscopic observation Recording facilities allow pressure recordings and ox meter analysis of oxygen saturation when desired The oximeter determinations are checked by gas analysis. The safety and morbidity of the procedure seem comparable to endoscopy and other well-established diagnostic instrumentations

Cardiac catheterization is a procedure requiring the co-oper ative efforts of members of the departments of anesthesia radi ology surgery medicine and the laboratory

Preoperative cardiac catheterization is used in the study of cardiac problems when it is thought probable that useful diag nostic information will be obtained. The benefits to the patient when a surgically correctible lesion is proved are obvious Cathe terization following cardiac operations is less often of immediate benefit to the individual patient It is usually done to obtain information which will advance medical knowledge aid in the evaluation of surgical technics or elucidate the physiology of the operated lesion or to determine the reversibility of pathologic changes Because of these considerations and because many of our operative cardiac patients do not reside permanently in this area the number of patients we have studied following operation is small

To date we have had occasion to study only one patient following a corrective operation for patent ductus arteriosus. The per timent catheterization findings are summarized in table 1. These findings demonstrate reduction of pulmonary hypertension following closure of an unusually large patent auctus.

TABLE 1 Pre and post operative cardiac catheterization findings in pat ent

Findings	Preoperative	Four months postoperative	
Right ventricular pressure Pulmonary arterial pre ure Shunt 02 Pulmonary artery 02 vena cava	100/7 mm Hg 90/54 mm Hg 8 1./min 87 percent saturation 68 percent saturation	48/2 mm Hg 48/15 mm Hg none 66 percent saturation 67 percent saturation	

B COARCTATION OF THE AORTA

Coarctation of the aorta is from three to four times more common in men than in women it is thought to develop in utero. The usual point of constriction of the aorta is just distal to the insertion of the ductus arteriosus. As a result of this constriction there is a stimulus to collateral circulation in utero. If the fetus survives there is little additional circulatory burden at birth and most do well for some time thereafter. If on the other hand the constriction of the aorta is proximal to the insertion of the ductus us arteriosus, there is no stimulus to the development of collateral circulation during intra uterine life because at that time the lower part of the body gets its blood supply largely from the pulmonary artery through the ductus. Under such circumstances, if the ductus closes at birth, an overwhelming load is suddenly thrown on the circulation and death often ensues from congestive heart failure before collateral circulation can develop

Coarctation definitely shortens life, the average life span is about 30 years and only one in 10 survives beyond 50 years. As a result of impediment of blood flow there is usually hyperten sion in the upper part of the body that is more marked following evercise hence, the resting blood pressures may give a false sense of security. The usual causes of death in patients with coarctation are rupture of the acta in 25 percent subacute bacterial endocarditis, often on an associated bicuspid actic valve, in 20 percent congestive failure in 20 percent and rupture of berry aneurysms of the circle of Willis in 10 percent Coarctation should be ruled out as a contributing cause of spontaneous sub arachnoid herorrhage in a young person

The diagnosis of coarctation is aided by carefully palpating the femoral arteries as a part of every physical examination and by comparing the blood pressure in the arms and legs if there is a suspicion that the femoral pulses are diminished. The ideal time to operate on these patients is between the ages of eight and 18 years so that they will not be needlessly exposed too long to the many potentially fatal complications.

The responsibility for the timely diagnosis of coarctation, hence rests heavily on the pediatrician Statistically one in every 2 000 to 3 000 children have coarctation

ROENTGENOGRAPHIC FINDINGS

The roentgenogram aids in determining the diagnosis and de monstrating the site and extent of the lesion. Frequently coarctation is suspected from the study of routino roentgenograms of the chest

Rib notching was the first recognized roentgenologic sign of this lesion and remains the most important one Other causes for rib defects have been cited but are extremely rare and are of little clinical significance Reliable indications of diagnostic rib changes are observed in about 70 percent of patients with proved lesions The fourth to the eighth ribs are commonly in volved less frequently changes may be seen above and below this level Notching becomes more prominent as the patient grows older This phenomenon is rarely seen below the age of 10 but has been reported at a much younger age Unilateral changes may be seen when the left subclavian artery is in the site of the coarctation, Figley recently called attention to changes in the contour of the barium filled esophagus associated with coarcta tion particularly the displacement caused by the poststenotic dilated segment. Poststenotic changes may be demonstrated in a high percentage of patients by introducing barium into the esophagus and making roentgenograms in the oblique and lateral posi

The figure 3" sign is helpful when present particularly if rib notching is not prominent. The upper arc of the 3 is due to prominence of the left subclavian while the actual site of the coarctation is represented by the center portion of the 3. The lower arc which is usually not as acute as the upper one represents the poststenotic part of the descending acts (fig. 4).

Absence of the actic knob is the least reliable sign of this shadow that cannot be differentiated from the normal. The site and extent of the lesion is best demonstrated by angiocardiograph (ing. 5) or actographs (ing. 5) or actographs.

SURGICAL CONSIDERATIONS

In the surgical correction of coarctation of the aorta, a lateral position with wide exposure is desirable, sharp dissection is advisable, and a dry field is a necessity. As the coarcted area is freed of overlying pleura, the ductus area is exposed and the ductus or ligamentum is ligated and divided. This should

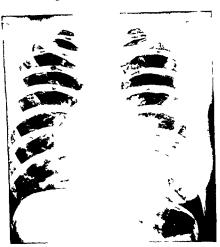


Figure 4 Roentgenogram demonstrating rib notebing and the fig e 3 sign in patient with a proved coarctation of the aorta

be done carefully because often there is a residual lumen As dissoction progresses, one must manage the dilated intercostal vessels Galy those that interfere with the anastomosis should be divided Others should be temporarily clamped if the cross clamps on the aorta are unlikely to control them Usually, by any tography preoperatively, it will be known whether or not there is a long defect which will require a graft Some operators have turned down the subclavian artery to anastomose it with the distal segment. This is satisfactory if kinking is prevented. A better procedure is end to-end anastomosis of the aorta after excision of the coarcted segment. Here again, suture technic is largely

a matter of individual preference. In our patients an over and over stitch or a continuous mattress suture has been used. Experimental work has shown the end results to be identical. For cross clamping simple coarctation clamps are used. In most of our patients the lumen was tiny so that cross clamping was not dangerous, and we have had no complications. In the absence of good collateral circulation however speed is essential and



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refrigeration should be employed or some by pass procedure used In case a graft is needed it should not be too long for the defect because the force of the blood flow will tend to buckle and obstruct the graft. The graft should be placed with its ligated intercestals uppermost so that if bleeding from them occurs they will be accessfible. We have not used nylon cloth grafts in patients but have done a successful series in animals. We have used lyophilized and fresh preserved vessels with equal success

RESULTS

Since June 1953 11 patients with coarctation of the aorta have been operated on at this hospital all are living Ten patients had

their coarctation resected. In one patient who lacked significant collateral circulation, operative removal of the constricted area was considered a greater risk than his disease and resection was not done.

Seven patients were males, four females. They ranged from a boy of eight years to a woman of 45 years who had been told six years previously that she was too old to risk surgical intervention.

Of the 10 patients who had surgical correction, three required grafts which were homologous acrtic grafts. In the seven patients having primary anastomosis, defects up to 2 5 cm. in length were overcome successfully.

The lumina of coarctations varied from complete obliteration to 5 mm in diameter Anjoicardiography in the one patient with min in mal disease showed little collateral circulation, and we must as sume that minimal constriction existed. Another patient by angio cardiography showed little collateral circulation. This patient was refingerated in an ice bath and the rotal temperature lowered to 82.4° F. With lowered metabolism, the spinal cord was able to withstand the oxygen deprivation during the period of circulatory occlusion while a graft was inserted, and the patient made a complete recovery.

Complications have been few One patient bled from an inter costal artery while still on the operating table. Thoracotomy and lightion of the vessel was done with dispatch and success. The second complication was in a 39 year old womin who on the twelfth postoperative day suddenly developed shock. On conservative therapy she made an uneventful recovery Bleeding, either from an intercostal artery or from the anastomosis itself, apparently had occurred.

Our follow up period is short. All patients in the immediate postoperative period showed improved pulses and elevation of blood pressure in the lower extremities with a decrease in blood pressure of the upper extremities. All patients became normotensive except one whose blood pressure was reduced to some extent. One patient continued to have an aortic diastolic mur mur presumably due to a bicuspid aortic valve.

The outlook in all fairness is not completely optimistic. One wonders if cerebral aneurysms are the result of hypertension or are associated congenital anomalies. Valudar abnormalities, especially the bicuspid actic values present in a large number of patients with correctation of the acrta, predispose to subacute bacterial endocarditis and are not correctible by operative means to correctibles, surgical intervention is the only form of definitive therapy available and is proving successful.

the discharge of his responsibilities much easier. The following "rules" are most suitable if applied during the 1º hours imme diately following the atomic explosion

The concept of thumb rules for evaluating radiation hazards is not original a splendid manual has already introduced such rules. The rules presented in this article however are modifications of the earlier rules and more closely approximate the true estimate they incorporate into the system two new prac tical rules and state these principles in a form which may permit easier retention

THE 2 4-6 RULE

When readings are announced by a monitor it is obvious that their significance must be understood in terms of probable sick ness and/or death. It is admitted that susceptibility to radiation varies among individuals Statistical data which express the prob ability of sickness and/or death from radiation are available. The data on which probabilities are based are accepted as valid even as much as actuary statistics a e the laws of probability and chance

The most important nuclear radiation hazard to personnel from an atomic detonation is gamma radiation. By definition an acute dosage of camma fadiation is that amount of gamma received by a verson over the entire body within a of hour veriod

Table 1 lists the probable effects on personnel of varying amounts of acute gamma desage. Nausea and vemiting developing within 24 hours after radiation exposure are among the earlier indications that a person has received a significant amount of gamma radiation. However it must be kept in mind that under conditions of stress nausea and vomiting might be of psycho genic origin

In personnel who have received 600 r or more gamma radiation vomiting will probably develop within the first four hours after exposure

Table 1 deals with dosage and not do e rate Dosage refers to the amount of roentgen whereas dose rate refers to rate of roentgen This distinction is akin to that between the mileage indicator of an automobile (revealing the number of miles traveled dosage) and the speedometer (indicating miles per hour , e dose rate)

The 2-4 6" rule merely reminds one that an acute dosage of

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TABLE 1 Probable effects of varying amounts of acute gamma dosage on personnel

Acute dos ge	Effect on exposed personnel		Comment	
(r units)	Sick (percent)	Di (percent)		
50	0	0	No sign of sickness No decrease in combat effectivenes	
100	2	0	N sea and vomiting in two percent for about one day All able to per- form duty	
150	25	0	Nau ea and vomiting in 25 percent for about one d y No need for per- sonnel evacuation expected.	
200	50	0	One balf a e sick. N u a and vom iting in 50 percent for about one day All evacuated as soon as poss ble No deaths e pected	
300	100	25	Nausea nd vomits g in all on first day All ev cuated as soon as pos sible Survivors ineffective for full military duty for about three months	
4 0	100	50	All sick one balf die. Nausea and vomiting in all on first day Survivors ineffective for full militar; duty for about six months	
650	100	100	All sick all die \ sea d vom- iting in all within four hours S r- vivors ineffective for full military duty f t over six months	

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TWICE THE TIME IS ONE HALF THE DOSE RATE WHICH IS 10 PERCENT TOO HIGH

Radiologic defense bills provide for monitors who after an atomic explosion survey areas to find existing dose rates. Be cause the number of monitors and radiac instruments are few, because the entire toritory requiring monitoring is extensive, and because there are always unforeseen circumstances incident to combat conditions which delay the frequency of monitoring these areas it is highly probable that within eight hours or so after an atomic detonation many essential compartments will have been monitored only once Furthermore, it is likely that the first eight hours or so after an atomic burst will be the period during which officers in charge will be required to make their most critical decisions. Hence any means by which dose rates for various

1

after detonation can be computed is highly de inable and able

H A B

H is the moment of burst A is a specified time after H

B is a specified time after A Time period HA equals time period AB

The rule of twice the time is one half the dose rate which is a creent too high, states that when time period Hi equils is no e to timated dose rate at moment B is one half the dose rate outling, taken at moment A but this estimated dose rate force it B is in error by 10 percent i.e. 10 percent too high

Example At one hour after atomic burst the dose rate is 1000th

- What is the estimated dose rate at two hours after burst?
- 2 What is the dose rate at four hours after burst?

Solution Twice the time is one half the dose rate which is 10 pc cent too high is the rule

1 At two hours after detonation the dose rate is one half of LW r 500 r/hr fut this is 10 percent too high Correcting 500 by Wp cent gives 450 r/hr as the estimated dose rate at two hours after bex.

If the dose rate is 450 r/hr two hours after burst at burkers after burst the derate will be one half of 450 or 225 t/hr but dus in error at +10 percent. Therefore the dose rate at the edof fout vill be about 200 r/hr.

TWICE THE TIME WHICH IS 10 PERCENT TOO HIGH IS ONE HALF THE DOSE RATE

The half life of a radioactive material is defined as the pertime in which its dose rate decrea es to one half its one is value. This definition is found in numerous texts and is sell known to students of chemistry and physics.

Burst	1 000 r/hr A 1 hr	500 r/hr B	250 r/hr C	125 t/ht D
		1 8 hr		
			3 24 hr	5 84 br

A is the instant one hour after atomic burst the dose pate being 1 000 r/hr

B is a specified time after A when the dose rate is 500 t/hr

C is a specified time after B when the dose rate is 250 t/bi D is a specified time after B when the dose rate is 125 t/bi Thus, the period of time represented by AB is a half life, i c, the period of time in which the dose rate dropped from 1,000 r/hr to 500 r/hr. The period of time BC is another half life, i e, the time in which the dose rate dropped from 500 r/hr to 250 r/hr. Similarly, still another half life is represented by the time interval CD, i e, the time in which the dose rate dropped from 250 r/hr to 125 r/hr. Hence, the entire period of time from A to D is three "half lives"

An interesting and useful relationship exists between the time periods BC and AB as well as between CD and BC. This rola tionship is a ratio in which time period BC is about four fifths of time period AB, and CD is four fifths of BC. This means time periods can be related to moments when the dose rate decreases by one half, a useful bit of information.

This relationship is also expressed in the so called four fifths rule which states that the half life of gamma radiation from an atomic bomb fission product is equal to four fifths of the clapsed time since detonation

Using a factor of four fifths in mental computation might easily lead to error whereas making mental corrections of 10 percent is relatively easier. The rule "twice the time which is 10 per cent too high is the time when the dose rate will have dropped by one half" is another form of expressing the "four fifths rule "twice the time which is 10 percent too high" always representing the moment when a half in the period is completed.

Example At one hour after atomic burst the dose rate in 1 000 r/hr

- 1 What time after explosion will the done rate be 500 r/hr?
- 2. What time after explosion will the do e rate be 250 r/hr?

Solution Twice the time which is 10 percent too high is one half the dose rate is the rule

1 At one hour after explo ion the dose rate is 1 000 r/hr therefore at twice that ume i e two hours after explosion the dose rate is 500 r/hr but two hours is 10 percent too high Hence correcting two hours by 10 percent gives 18 hours after explosion as the time when the dose rate will be 500 r/hr in other words 18 hours represent the completion of the half life

2. At 18 hours after explo ion the do e rate is 500 r/hr lien e 1 stimes 2 (twice the time) which is 3 6 but 10 percent too high me as that at 224 hour after detonation the dose rate will be 250 states.

In the answer (3.24 hours), it is only necessary to carry our the result to one decimal place for all practical purposes because 04 of to rimutes is only 2.4 minutes. Fliminating the second decimal place trakes

for ease in mental computations without significantly altering the results for tractical purposes

THE DOSE RATE IS THE DOSAGE FOR THE FOLLOWING HOUR

The rule states that the dose rate at a given amount represents the total dose of radiation ($i \in d$ dosage that will be received) in the hour following that given moment.

The rule is only an approximation since it ne lects the decay of midoactive material during the one hour period. A more exact method would allow for decay which calls for decay curves or tables of computed data. Although the values obtained by this rule are slightly high this is a desirable feature because it in cludes a safety factor in the estimate

It must be cautioned however that this rule can be used at any time after one half hour following the burst. During, the first half hour immediately following the burst, calculations by the use of this rule or any other method are of questionable accurant due to the changing conditions in the deposit of contamination. It is in this first half hour following atomic detointion that full reliance must be placed on desimeters and radiac instruments.

Example The Command states that no man should rece r di tion in excess of 50 roentgens. An emergency task which will tak one hour must be performed Th. dose rat: in the area is 40 r/hr. May the men enter the area and work there one hour without exceeding the Commands 50 r maximum exposure limit?

Solution The dose rate is the dosage f r the following hour is the rule

If the dose rate at the beginning of the hour is 40 t/ht and if the personnel entered at thit moment and stiyed for an hour they would receiv a total dose of no more than 40 roentgens. Hence the ansier is less.

FIT FOREVER" RULE

The rule states that the maximum radiation dose that can be received from a given moment to infinity is 5 IT

- F represents the factor 5 of the formul
- I is the dose r te in roentgens per hour t a time (T) after the explosion
- T is the total time sin e the explosion

Example The dose rat for an ar is record d as 10 r hr at moment six hours after 10 mic detonation. What is the total dose in roent gens th t can be received if men, entering that area at the moment of t cording stay there not in firm ty?

Solution FIT forever is the rule

F 1s 5 I 1s 10 r/hr and T" 1s six hours. Hence 5 times 10 times 6 equals 300 roentgens the total dose that these nen would receive if they stayed in the area forever

"FIT FOR HALF LIFE" RULE

This rule states that. "The total dose in roentgens received during one, two three, four or five half life periods equals 1/10 2/10 3/10 4/10, or 5/10 of 5 IT (ϵ ϵ , "FIT forever" rule)

Example The dose rate in an area two hours after atomic burst is found to be 20 r/hr What dose in roentgens will men receive if they enter that area at the time of reading and stay 16 hours?

Solution The half life of a radioactive substance as previously stated is the period of time in which its dose rate decreases to one half its value. Because the dose rate at 2 hours after burst was 20 r/hr the moment when the dose rate decreased to one half of this value end of half life (as found by the twice the time which is 10 percent too high rule) is 2 times 2 hours or 4 hours after burst but this is 10 percent too high therefore the moment 3 6 hours after burst represents the completion of the first half life. Hence the difference in time between the reading is 10 r/hr (i. e. 2 hours after burst) and the time when the reading is 10 r/hr (i. e. 3 6 hours after burst) is 1 6 or the duration of the half life.

Because 1.6 hours is the one half life and this is the period of time the men remain in the area we merely substitute in the FIT for half life rule the following 5 for F 20 for I 2 for T and 1/10 for the one half life By multiplying $5\times20\times2\times1/10$ we get 20 or 20 roentgens the total dose the men receive

DISCUSSION

In this system there are six radiologic rules of thumb as follows (1) The 2-4 6 rule (2) twice the time is one half the dose rate which is 10 percent too high (3) Twice the time which is 10 percent too high is one half the dose rate (4) The dose rate is the dosage for the following hour (5) IIT forever rule and (6) IIT for half life rule

This system compares with the rules cited in reference 1 as follows

- 1 The 2 4 6 rule. There is no counterpart in the rules of reference 1 $\,$
- 2 Twice the Time is One Half the Dose Rate Which is 10 Per cent Too High The counterpart in reference 1 is the first rule "It the end of a period of time in the future equal to the time

since the explosion the dose rate will have decayed to one half of its present value

Table 2 compares the values obtained by each of the rules that is by the rule presented in this article and by its counterpart in reference 1, and then compares the values of both with those obtained by the graphical method (fig. 1) Examination of table 2 reveals that in all cases my 10 percent correction factor rule more closely approximates the dose rates for different moments after atomic defonation as obtained by the graphical method. This method is based on data derived from dosage and dose rate curves of residual radioactivity published by the Armed Forces Special Weapons Project and is therefore considered the criterion for accuracy.

Certainly when the estimates by the twice-time rule and the graphical method agree within a roenigen or so the estimates are close enough but when there are differences of from 10 to 20 r (as shown in table 2) it is believed wiser to adopt the attitude of the less exposure to radiation the better Furthermore the slightly higher values obtained by the 10 percent correction factor rule is a desirable feature because it provides an automatic safety feature

- 3 Twice the Time Which is 10 Percent Too High is One Half the Dose Rate There is no counterpart to this rule in reference 1
- 4 The Dose Rate is the Dosage for the Following Hour This
- 5 FIT Forever Rule Although the context of this rule is identical to that of its counterpart in reference 1, the expression FIT forever is a memory aid and easier to memorize than Third rule. The maximum amount of gamma dosage which can be received in an area which has a dose rate (1) at a time (4) after the explosion is expressed by 5 times the dose rate times the number of hours since the explosion Or $5\times 1\times t$ is equal to the total dose from time (b) infinite time
- 6 FIT for Half Life Rule Although here too the thought expressed in this rule and in its counterpart in reference 1 is the same nevertheless the application of this thought as described in reference 1 leads to values of significant deviation from the values received by means of the graphical method. This is because in reference 1 the pure interpretation of the term half life is not applied instead a looser application of "half life is used obviously in an effort to secure a simple rule. This oversimpli fication can easily be avoided by the more accurate "twice the time is 10 percent too high rule."

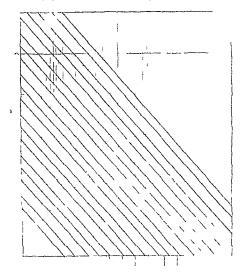
TABLE 2 Comparison of dose rates for specified times as obtained by the first rule. The tunce the time s one ball the dose at which is 10 percent too high rule and the graphical method.

Dose rate recorded at	Methods	Estimated dose rates at specified hours after detonation			
one hour after	used	r/hr at	r/hr at	r/hr at	
detonation		2 hours	4 hours	8 hours	
1 000	FR	500	225	112 5	
	TTR	450	203	90 5	
	GM	430	195	85 0	
500	F R	250	125	62 5	
	T T R	225	101	45 0	
	G M	215	98	45 0	
200	FR	100	50	25 0	
	TTR.	90	40	18 0	
	GM	90	39	18 0	
100	F R	50	25	12 5	
	T T R	45	20	9 0	
	G M	43	19	8 9	
50	F R	25 0	12 5	6 7	
	T T R	22 5	10 0	4 5	
	G M	22 0	10 0	4 2	
20	FR	10 0	5 0	2 5	
	TTR.	9 0	4 0	1.8	
	GM	9 0	3 7	1 7	
10	F R	5 0	2 5	I 75	
	TTR	4 5	2 0	0 9	
	G M	4 2	1 8	0 8	
5	F R	2 5	1 25	0 625	
	T T R	2 2	1 0	0 45	
	G M	2 2	0 95	0 42	
2	F R	1 0	0 5	0 25	
	T T R	0 9	0 4	0 18	
	G M	0 9	0 38	0 18	
1	FR	0.25	0 12	0 06	
	TTR	0 22	0 10	0 045	
	G VI	0 27	0 095	0 043	
For a mi	T		<u> </u>	\	

Fu t al

Tw ce-time tul

Graphical m thot?



er im G ph diobta th dos at at y tube th de i at ny oth im i k oun. (R pro-Sp I Wapon Pict D g d Do t ty Ba don Mitpl De ay [G Cur s fR d lRd Pod et grap/1 p 3)

The folloving illustrative problem is an example

The do e rate 2 hours after a detonation is 50 r/hr What dose will be received at the end of 4 hours 8 hours 16 hours 32 hours and 64 hours?

The estimates for the time periods within 24 hours obtained by the fourth rule are from 14 to 90 r lower than similar data ob tained by means of the graphical method (as shown in table 3)

One might contend that a difference of about 20 r is "close enough" for practical purposes. However, one cannot deny the wisdom of the cardinal guide of the less exposure to radiation the better. The peacetime standard for radiation exposure is 0 3 r distributed over one week, a wartime standard might easily be 50 r distributed over the same period. It can be seen then that 20 r is 60 times the peacetime standard and represents 40 percent of the possible wartime standard. Furthermore, the problem cites the radiation which is received within 24 hours (i. e., acute dosage), in contrast to the standards which relate to one-week periods (i. e. chronic dosage)

Dose received at end of	4 hrs	8 hr	16 hrs	32 hrs	64 hrs
FOURTH RULE	50 r	100 r	150 r	200 r	2 50 r
Graphical Vethod	64 r	120 r	170 r	214 r	252 r
" Error bas don the Graphic I Method	22**	-160-	-12**		-1~

TABLE 3 Compa son of graphical method and fourth rule

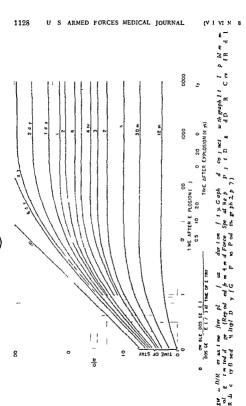
The solution of the above problem considers the moment four hours, eight hours 16 hours, et cetera after detonation to be the completion of the first, second, third et cetera, half life respectively

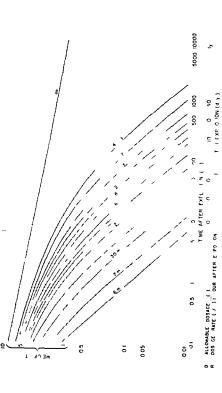
The moment after detonation that represents the completion of the first, second third et cetera half life periods can be more accurately determined by the use of our rule of "twice the time which is 10 percent too high." This rule would cite moments 3 6 hours 6.5 hours, and 11.7 hours after detonation to be the completion of the first, second and third half periods respectively.

In other words if one applies the FIT for half life' rule and consider, the half life period to be that obtained by the use of the "twice the time which is 10 percent too high" rule a "truer" relationship between the periods and the dosage received may be observed. Thus in the above problem personnel would have received 50 r at the moment 3.6 hours after detonation 100 r at 6.5 hours and 150 r at 11.7 hours.

CONCLUSION

The radiologic rules of thumb are of value in estimating the hazards produced by radiologic contamination from an atomic



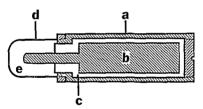


ular duration of stay in a contaminated area the dose rate of which is known at the time of entry (Reproduced from A med Forces signe 3. D/R cersus time after explo son for various duations of stay. Crapt used to determine the total dosage received for a partic Special Heapons Iroject Dos gen d Do e Rat Curves of Residual Radioactivity Based on Multiple Decay of Cross Fi sion Prod ucis graph 3 p 11)

weight of rosin The phantom was constructed to permit access to points within the head for the placement of the ionization chambers (figs. 3 and 4)



Fgre 1 S ret on at hamber showing small



Fgur 2 Sue et oniaton hamb (a) Ot hell (b) I me d I met with a t a. () D be tric (d) Thin u ll d ap () A hamb

EXPERIMENTAL METHOD

Ten points at which to mea ure radiation levels were chosen Several of these were selected because they are located in areas rich in lymphoid or glandular ussue. Points at which overlap or intersecting planes of radiation might be expected were also included. These points were (1) at the skin of the neck when using the panoramic exposure and at the kin of the check when using, conventional exposure (9) in the region of the sella

turcica (3) in the region of the parotid gland (4) in the sublingual region (5) in the center of the base of the tongue (6) in the cornea of the eye, (7) in the region of the thyroid gland, (8) in the deep cervical lymphatic region (9) in a lower bicuspid tooth socket, and (10) at a point just posterior and medial to the lower



Figure 3 Wax phantom shows g placement of son zation chamber at "skin of cheek and rece sed location fo measurements n reg on of neck lymphatics

third molar The last-mentioned location was included because the axis about which the beam of roention rays was rotated durin, panoramic exposure passed through this point. It was desired to determine if any excessive concentration of radiation occurred at this center of rotation.

Rate of delivery from the filtered reentgen ray source was about 558 millitroentgen (mr)/sec in air at 12 inches from the target when using the slit or narrow beam in the panoramic technic, and about 647 mr/sec in air at the same distance when using a round cone of rays for the conventional intraoral technic Delivery rates were measured using the Sievert chambers

Skin target distance was 8 inches when using the standard intraoral 14 film radiographic method and varied from 8 to 12.5 inches depending on the position of the roentgen-ray source at any given time in its cycle of motion about the head during

roentgenography by the panoramic method. Total exposure time was 25 seconds with the panoramic technic and 40 5 seconds with the intraoral method.

In each full mouth exposure included in this exponment, the condutions that would exist during actual clinical practice were adhered to Sandard load backed dental films were positioned in the phantom for each single exposure by the conventional technic One senies of 14 exposures was found to be sufficient to produce



Figur 4 Ha. ph 1 m d art lated for pl ceme t of aton hamb rs t te lb t

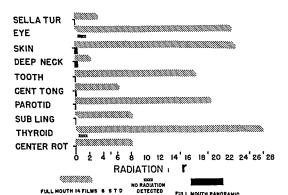
radiation levels at all measuring points falling within the ran,e of the ionization chambers. It was necessary to repeat the exposure 10 times when using the panoramic method in order to obtain levels of radiation that could be reliably measured by use of the same chambers.

With the panoramic method the total skin surface area exposed to radiation at any point in the exposure cycle was less than I square inch During exposure by conventional methods about 19 square inches of skin area were irradiated thing each individual film exposure and overlapping of irradiated areas i sunsvoidable during a series of films required for full mouth mentgenography

RESULTS

Levels of rediation measured at the points selected are graph cally shown in figure 5. It will be noted that under the conditions of this experiment, the highest level of ionizing radiation during full mouth mentgerographic exposure with the panoramic technic existed in the cervical limphatic region of the neck and amount-

ed to 042 r The highest levels of radiation when using conventional intraoral mentgenographic technic existed at the skin" of the cheek and in the region of the thyroid gland, where 23 and 27 r respectively, were recorded



F gure 5 Levels of radiation measu ed at 10 selected po its in and abo t the human head phantom, us ng a conventional and a panoramic filt-mouth contenoporable technic

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SUMMARY

Levels of ionizing radiation produced at points in and about a wax phantom of the human head were measured during full mouth dental radio_raphy by a panoramic method and by a conventional 14-film intraoral technic In this study small volume ionization chambers were found to be useful in measuring radia tion developed during dental x ray exposure

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PSYCHIATRIC REPROFILING IN BASIC TRAINING CENTERS

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THE Army Regulation which establishes standards for the physical profile for enlisted men is AR 40 115 dated 20 August 1948 its title is Medical Department, Physical Standards and Physical Profiling for Enlistment and Induction Paragraph 12 of this regulation gives the P U L H L S system or Physical Profile Serial Chart the S section of which is entitled Neuropsychiatric It specifies that a man with a mild transient psychoneurotic reaction or mild character and behavior di order or borderline mental deficiency is given an \$2 profile

The purpose of profiling is to allow the assignment of those with mild disabilities to limited duty While the profile system is meant to be a useful guide in determining the worl notential of a man we must admit that in the field of psychiatry and this includes military psychiatry the functional gradations between a person who is normal and one who has a clear cut psychiatric disorder has not been clearly defined nor classified. The matter is even hazier when the psychiatrist attempts to distinguish the normal from the mildly abnormal and then tries to assess the extent of the disability caused by a minimal apnormality. To make matters even more complex the criteria separating the S-1 (normal) from the S-9 categories in the profile serial chart may be rusleading if one thinks only in terms of diagnosis rather than of function As soon as one begins to contemplate function as the basis for profiling one starts to suspect that the difference between the -1 and -2 categories may be illusory in many in stances and certainly extremely difficult to predict before a man has had even a trial of duty In this connection it is inter esting to note that, in our experience most military psychiatrists make little or no use of the S-2 category preferring either to Live a man no protection (S-1 profile) or maximum medical protec tion (\$3 profile) This neclect of the \$-2 category is not univer sal however and leags to some interesting developments

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The induction centers generally fill up training divisions or centers within a specified geographical area with groups of inductees A civilian coming up for induction or enlistment is given along with his routine physical examination a screenin neuropsychiatric examination. At that time, his complete physical profile is determined and recorded for the future suidance of training center personnol.

Late in November 1952 of a group of such men from one of the induction centers the Third Armored Division Classification and Assignment Officer found that 103 men had S-2 profiles. The "S" category was the only portion of the profile rated below 1 for most of these men. These men with an S-2 profile created a difficult problem for him, because such men are not considered fit to be assigned a military occupational specialties code number for combat. The only sensible recourse locally available was to send them to companies conducting an 8 week basic training period (an abbreviated form of the 16-week cycle) and, on completion of the 8 weeks to one of the Army common specialist schools in order to fit them for noncombatant duties.

These men formed the bulk of those admitted to the Army common specialist schools from the Division Other considerations, such as the Division's need for specialists and requirements of the school for intelligence aptitude previous civilian experience or motivation of the student soldier had to be relegated to a position of secondary importance. The Division could not send other men with normal plysical profiles to the schools, even though their qualifications were often much better. To sum up the psychiatrist at the induction center by his low profiling un wittin, ly had set up the major criterion for deciding whether a man be trained for combat or for combat-support roles.

The chief of the Mental Hygiene Consultation Service (MIICS) suggested a method of relieving this situation. After securing proper authority all induction 5-2 profiles were automatically changed to 5-1 at this post.

This was based on the assumption that a man cannot properly be given an \$2 profile at the time of induction because the physician at the induction station has (1) little basis for making such a fine discrimination between an \$1 and an \$2 category (2) a limited amount of social history on each man and consequently is unable to judge what a man's past performance has been (3) many men to screen in a short time, and consequently cannot evaluate a man a psychiatric status unless there is a marked disorder of affect ideation or behavior and (1) difficulty in predicting the reactions of the men to the shades of environmental stress which will influence them during their Army

service. In the face of the above difficulties, it would seem that, when it comes to giving an S-2 profile the decision at the induc tion station can only be a matter of guesswork or intuition

DEVELOPMENT OF THE STUDY GROUPS

Following the automatic reprofiling the Classification and Assignment Office reassigned about 50 percent of the above mentioned 103 men to a normal 16 week basic training cycle. The others remained in the abbreviated 8 week cycle

It was thought that a comparison of the adjustment made by two such groups would offer an opportunity to evaluate the wisdom of the profile change particularly because it is general oninion that men with mental or emotional disorders do not function as well in a normal 16-week cycle as they do in the briefer 8 week cycle A statistical comparison of two such groups in regard to com pany character and efficiency rating and the incidence of sick call hospitalization referral to the VHCS courts martial com pany punishment, AWOL discharge from the Army and success ful completion of basic training might help to confirm or dispel such an opinion

LXPERIMENTAL METHOD

In this study primary records and basic training company evaluations were collected and analyzed No interviews were leld with the men concerned because it was thought wiser that they should not even be aware of the reprofiling It was also as sumed that these soldiers would within the 8 to 16 weeks of their basic training come to the attention of the Mental Higiene Con sultation Service if the reprofiling created difficulties for them

As all men were assigned to the Third Armored Division from induction centers. Classification and Assignment Branch immediately identified all those with S-2 profiles and prepared the profile changes to S-1 which were then signed by the chief of the MHCS Will in a few days Classification and Assignment Branch a signed these men according to their individual qualifications and the needs of the Division When we received this information we placed each man in one of the two proups depending on wheth er he was assigned to a 16 week cycle or an 8 week cycle. The assignment was made by Classification and Assignment Branch independent of any influence by us The case samples consisted of 415 men divided into two group one with 19° and the other with 2°3. The former group was trained in an 8 week cycle followed by 8 weeks of schooling. In addition to their original S-o profile 60 of the men trained in the abbreviated cycle had low profiles in other categories. The latter group was trained in a normal 16-week cycle The trainin, of these groups was pread

out evenly from December 1952 to December 1953 so that seasonal variations had little influence on the results obtained No matching was made of intelligence urban or rural rearing previous occupation, education or race

Company contacts were made by one of us, a psychiatric social work officer A psychiatric social work technician accompanied the officer for the purpose of screening company records while the officer held the evaluation interviews with a person in responsible authority in the company usually the company commander. These contacts were made either two days before graduation or within the week after graduation. Information was obtained before the company commander was informed that the men originally had \$-2 profiles. It was believed that this procedure, had little or no influence on the soldier's completion of basic training or on the company commander's evaluation. This company contact provided the material on the company commander's qualitative evaluation, as well as information concerning. AWOL's courts martial company punishments, discharge, and success or failure of the sol dier's completion of basic training. The morning reports (DA Form 1 dated 1 Au_sust 1951) were studied in order to obtain much of the company data.

The questions proposed to the responsible person in the company by the psychiatric social work officer in regard to the evaluation of each trainee were as follows

- 1 What do you think of this trainees character and efficiency? (Don't know unsatisfactory average or excellent.)
- 2 Did you attempt to utilize this trainee in any leadership capacity? (Yes or no)
- 3 If you tried this trainee in a leadership capacity was he successful or unsuccessful in demonstrating leadership qualities?
- 4 Will this trained successfully complete or has he successfully completed basic training, or not?
- 5 Do you think this trainee would be successful or not as a combat soldier?
- 6 Would you, or would you not, desire to have this trainee work for you after he has completed basic training?

Dispensary records were then examined Trainees of certain companies regularly attended a single dispensary throughout their period of basic training. Frequency of sick call for each man was tabulated and note made of any hospitalization. At the hospital dates of hospitalization diagnoses and dispositions were secured Discharge Branch Third Armored Division was then

asked for a record of all instances of discharge along with reasons for discharge Finally the files of the MHCS were studied for the entire year under consideration. Those in the two groups who had been referred to the MHCS along with their final diagnoses and dispositions were noted. The collection of information from these sources supplied the raw data for this study.

RESULTS

In a number of the company contacts the investigator sought the company commanders opinions of the trainees who formerly had an \$2 pmfile For the most part they confirmed our general impression that the original profile would have prevented many inductees from becoming combat soldiers. To quote one officer. No reason for these men having an \$2 profile. They are some of the best men in the company. This opinion was more prevented along among company commanders in the 16-week training cycle.

Generally one obtained the impression that morale both of cadre and trainee was better in the 16 week training cycle than in the 8 week cycle. The soldiers in the 16-week cycle seemed more eager possessed more vitality had more bravado and a more purposeful air Being identified as part of a combat branch of the Army apparently exerted a beneficial influence. Closely allied to this was the impression that the commanders of the 8 week train ing cycle companies appeared to have had less basic interest in their men The tacit attitude seemed to be that the trainee was al ready lost from a combat branch and hence future school success depended little on the 8 week basic training cycle Therefore it appeared that only superficial concern was given to the points of training especially those related to combat. On the other land commanders of 16-week training cycles seemed to feel a direct responsibility for the man's successful graduation because they realized that what a trainee learned in basic training might later save his life his company or his mission in combat.

Originally we thought that two company contacts for evaluation interviews in the 8 week cycle would be practical the first at the end of the 8-week basic cycle and the second at the end of the schooling, cycle. The first contact proved valuable but we soon found that the second contact at the end of schooling was of little use because in the school phase the company commander had little except administrative contact with the men. Further more because he might have as many as 500 men in his corpany it was practically in possible for him to make an individual evaluation of every man. We therefore discontinued company evaluations for the school period of those men who had been in the 8-week training, cycle. The evaluation interview was the only measure that thid not cover a 16-week period for the 8 week cycle.

group all other indexes sick call, et cetera, were for a 16-week period comparable to that of the 16 week basic training group Sixteen men in the 8 week training cycle group had subsequent schooling at other posts making it impossible to follow up this segment of the group for any further investigation during their school training

In obtaining company evaluation, it was first thought that only the company commander should be interviewed. This too was found to be impractical for various reasons. Consequently in revising the approach the concept of immediate rather than ultimate authority was used. This meant that any company officer, or the administrative or field first sergeant was eligible to give the evaluation. In many cases we discovered that a first sergeant's knowledge of his trainees was the best available in the company. The ideal evaluation situation encountered a few times, was the presence of the company commander other company officers, the first sergeant and the platoon sergeant, all of whom contributed to the evaluation.

Most of the company commanders were jumor officers and appeared to be in their early twenties and recently commissioned it seemed that such younger officers had an eager individual interest in their men, and consequently based their evaluations on participating observation rather than on the fact that a trainee had come to their attention because of some particular deficiency or some outstanding quality.

When people other than the company commander gave the company rating an added difficulty was their occasional reluctance to divulge information if it might reveal a difference of opinion from that of the company commander In all these cases, the person being interviewed was asked to inform the company commander of the team's visit and was requested to telephone us if there was any objection to the original rating. In no instance did anyone call to change an evaluation

Company punishment, courts-martial, and AWOL figures were found to be of limited value. The company commanders attitude toward discipline as reflected by the data obtained in these categories was found to cause a large variation. For example, one company commander might conscientiously use company punishment literally, as directed by Army Regulations or local policy. Such a commander would have on record a large file of misdemeanors. Other company commanders, thinking perhaps that a large number of company punishments courts martial, or AWOL's might reflect adversely on their competence as leaders appeared to avoid the permanent recording of these events, and consequently would use their own unofficial methods of handling such situations. Further in some instances it was found that,

because company punishment records were destroyed as soon as a soldier was transferred out of the company the team missed obtaining these figures if they arrived even one day late A certain number of these files were consequently lost to the study Courtsmartial figures were an added source of error. It was found that in many instances there was a considerable time lag between of fense and ultimate trial. We believe that the records did not reveal a true picture because even though an offense may have been committed during basic training many courts-martial took place after graduation and hence could not be made a part of our records.

Other primary records required by Army regulations i c the morning reports dispensary records hospital records Dischange Branch files and MHCS files were the most reliable sources of information Standard procedures led to fairly uniform recording and systems of filing, differed little from office to office As a result full and accurate information was obtained in all these areas.

TABLE 1 Cb aua naly Luntan D at G S en f λ fr ed m Char nd II en v 4 83 20 N. 4 ff Tral lead 8 55 **a** 1 Sew k mbi d 1 d N diff 1 0.02 90 Compl 1 50 20 N. dell ffer vene 1 7 89 0.1 De rablev 0 37 60 Ndff

It can be seen from table 1 that in cortain areas there was no significant difference between the two groups. This table however does show two significant differences more trainees in the 8 week group were given opportunities for leadership positions than were those in the 16 week group and significantly more trainees of the 16 week group were considered likely to be successful in combat than were those of the 8 week group.

Table 2 shows that the 6-week group had a significantly higher rate of discharges ti an did the 16-week group though the number discharged in oither group was so small as to be hardly vorth while analyzing statistically. All discharges were for redical reasons and none for clear cut osveharter teasons. As indicated by the data in table 2, the only significant chang es noted are that the 16 week group had a larger number of trainees who went on sick call more than five times, as contrasted with the 8-week group. The numbers involved, however, were small Also, the AWOL rate is higher in the 16 week group than in the 8-week group. Again the increase is rather trivial, only six beyond statistical expectancy.

TABLE 2	Chi square	analysis o	f primary	records
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R đ	Dgs of fedm	χ	Þ	Sign f c
Disch ge nat	1	4 00	04	!! 8-w k ubject dis harg d
Hosp tal zat n	1	0 00	99	Nodff nc
MHCS r f ral	1	0 0 1	95	h diff ne
S ck call	1	1 17	30	h dif me c
S ck call	1	7 89	01	Mr 16-wek bjct sckcall
Cont martial	1	0 13	25	N d ffere ce
A% OL	1	6 25	02	Me16-wekbyt ANOL
Company pun hm t	1	2 39	12	h diff re c

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CONCLUSIONS AND DISCUSSION

In rating the trainees of this study the company commander had no knowledge of their previous S-2 profiles and was comparing them with other trainees in his company In the 16-week training companies the subjects were competing with men who had had normal physical profiles from the very outset of their Army service whereas those in the 8 week training companies were competing, in many instances against men with acknowledged limitations. The data from table 1 indicate that the 16 week trainees compared just as favorably as did the 8 week trainees against their respective competition. It appears, then from the viewpoint of the character and efficiency rating that men formerly profiled with an S-2 rating will function just as well in a 16-week cycle as will those in an 8 week cycle followed by school training

Within the limitations imposed by the sampling of the present study and the relatively brief period of Army service concerned the change of profile from S-2 to S-1 seems to have been justified.

For some reason not readily apparent a significantly larger number of subjects in the 8 week cycle than in the 16-week cycle

are (1) relaxation of pharyngoal and laryngoal tissues which penmit the tongue to fall back into the hypopharmyx (2) improper positioning of the head and neck, (3) defective or improperly adjusted apparatus (4) anatomic abnormalities of the respiratory tract (tumer polyps scar contractures) (5) foreign bodies or excess secretions (6) laryngospasm or broncho-spasm (7) inhibition of the respiratory movements of the thorax and diaphragm (tight cast, malposition leaning on the patient," and other retricting factors). The treatment of respiratory obstruction is directed first of all toward localizing and eliminating the cause of the obstruction. The obstructing factor may be removed simply by repositioning the head or it may be complicated so as to require emergency tracheotomy to re-establish the airway that has become occluded by aspirated material laryngeal edema or neurologic or inflammatory lessons.

APSEA

Annea or complete absence of respiratory movements can be due to a number of factors It may be secondary to breath holding a sudden overdose of a stimulating drug laryng ospasm paroxysms of coughing or respiratory obstruction Other factors to consider are (1) hypocapnia due to hyperventilation and subsequent lower in, of the carbon dioxide stimulus below the respiratory center threshold (2) high concentration of oxygen administered in the presence of oxygen want with discontinuance of cambid body effect on the respiratory center (3) neurologic disturbances uch as increased intracranial pressure (4) cardiocirculatory failure with resulting central nervous system hypoxia, (5) over dosage of either anesthetic agents or supplementary drugs and (6) reflexes of autonomic or somatic origin. Voluntary swallowing movements accompanied by momentary consumon of respiration as seen in state I anesthesia should not be confused with apnea from other causes

All patient, in apnea must have ventilation instituted immediately. This ventilation is best accomplished by rhythmic compression of the breathing bag even 3 or 4 seconds to ensure adequate tidal exchange. It is most important that a rational diagnosis of the existing condition precede further treatment. A calm approach to the problem is both ossential and practical for with an adequate airway and stabilized circulatory status the patient will be receiving maximum supportive therapy until the cause of the apnea can be determined and corrected. It is in this early phase that most attempts at resultation in the survey made by Vou el and as ociate were deficient. Ventilation with boxygen was used early in only 10 of the 9 deaths reported in their survey and in 12 patient, the only attempts at resuscitution were by manual compression of the thorax even though an anosthesia machine was available.

RESUSCITATION

If a primary circulatory collapse occurs, as evidenced by ab sence of pulse, blood pressure, or heart action, cardiac resusci tation must be instituted immediately Care must be taken to distinguish primary circulatory collapse from the circulatory depression which occurs with an overdosage of anosthesia or severe overstimulation of the autonomic nervous system If the apnea is due to an intracranial lesion it would be best to discontinue all anesthetic drugs, ventilate and oxygenate the patient, and continue surgery (with local anesthesia if necessary) The treatment for an overdosage of inhalation anesthetic is to estab lish respiratory and circulatory support as indicated anesthetic mixture and dosage received by the patient must be verified to rule out hypoxia caused by an excess of any agent. In the event of overdosage, the alveolar concentration of the anesthetic agent may be reduced by dilution with high flows of oxygen and repeated emptying of the breathing bag Barbituate overdosage is treated by providing respiratory and circulatory support until the agent is metabolized or eliminated Overdosage of narcoucs is treated in the same manner, and A allylnormorphine is given to counteract the depressant effects on the respiratory center Hypocamua is not significant unless it is severe enough to affect the central cardiac pressor mechanism and is accompanied by circulatory depression. In the presence of marked hypotension carbon dioxide replacement may be necessary and can be accomplished by having the anesthetist exhale into the breathing bag thus supplying the patient with the necessary carbon dioxide The apneic patient would also accumulate carbon dioxide but the associated hypoxia is hazardous to the patient In the presence of persistent hypotension it may be necessary to use vasopressors

The beneficial effects of respiratory stimulants such as carbon dioxide and many of the analeptics, are debatable Analeptics. such as N allylnomorphine and tensilon (N ethyl N (m hydroxy phenyl)-V A dimethylammonium bromide) are used for the specific displacement of morphine and curare thus relief of depression may be expected Carbon dioxide and most of the other analeptics stimulate the respiratory center and increase the oxygen uptake. but do nothing in relation to displacement or degradation of the drug which is responsible for the acute depression Following the initial stimulation of the respiratory center a secondary decression may be expected from the effects of the analogue which intensifies the initial depression Carbon dioxide may be used in the postoperative state to initiate hyperventilation in the prevention of atelectasis In this instance, 100 percent carbon dioxide from a gas hose is administered by a completely open system. In this way the patient is stimulated to breathe more

THE MECHANICS OF MEDICAL MEETINGS

WARNER F BOWERS Col 1 MC USA

THE IMPORTANCE of developing the ability to speak clear in accurately and convincingly in public should be emphasized in our residency training program. Also we should teach our residents the mechanics of preparing and conducting a modical meeting. Many of the young men will go out as chiefs of services in smaller hospitals where they will be required to arrange and present their share of the hospital staff meetings. Sorretiries they may be requested to arrange a program for the local civilian medical society or to conduct a short course for medical officers. It is a great source of satisfaction to them and to their audiences if they do these things smoothly and well. The importance of this matter seems to indicate that a short discussion might be worth while.

PLANNING THE PROGRAM

In general there are five styles or types of program which can be chosen each having its specific good points and short comings. The type should fit the needs of the occasion and it is well to vary the approach from time to time to avoid monotony.

One speaker The simplest program consists of one speaker who delivers a talk on some specific subject This type of program is excellent provided the speaker is skillful the subject is of general interest and the material is not too voluminous to condense 'Usually a speaker cannot hold his audience much lorger than 90 minutes and actually 45 minutes should be the ordinary maximur However there are speakers who can hold a large group for three hours without restlessness. The inherent dangers are that the speaker may be a poor one and it is almost impossible to find a subject of sufficiently wide interest to hold the attention of a mixed audience such as in a hospital staff meeting where various specialities are corresponded.

Setteral speciers Those putfalls may be avoided by a program rade up of more than one speaker discussing unrelated subjects licre again the time limitations for maximum length are the same The minimum length must be determined by the raterial and the speaker s ability it being realized that it is ensier to ramble for 20 minutes than to say it all and sit down in half that time A good example of such a meeting is a program put on by a group

Fm Book Amyll p | For Sam Hus n.T

interested in clinical research, each outlining his project and giving its current status in seven or eight minutes. An excellent medium with wide adaptability is the symposium where some general theme or subject is given broad coverage by a group of speakers, each discussing the subject from his particular viewpoint. An example would be a symposium on duodenal ulcer with the psychiatrist discussing psychosomatic elements, the gastroenterologist presenting aspects of diagnosis and medical regimen, the radiologist giving roentienographic findings, and the surgeon discussing indications for operation, technic, and follow up results.

The panel discussion The fourth mechanism is the panel discussion which often is poorly done because the essential difference between a symposium and a panel is overlooked. The nanel should be composed of authorities with diverse viewpoints or representing different specialties. One technic is to have each give some short, prepared remarks to orient the audience, then to ask for questions from the floor The usual failure is to permit the panel members to use most of the available time in their opening remarks so that almost no time is left for audience par ticipation This in effect becomes a symposium rather than a name! Probably the success of a panel rests in large part on the moderator He can eliminate the opening remarks to good advantage, starting off directly with previously prepared ques tions designed to include the various panel members, to open up fruitful avenues for discussion, and to stimulate the interest of the audience If properly done, there will be audience ques tions almost immediately and thus the entire time can be devoted to questions and answers. The moderator must keep things moving, prevent monopolization by one speaker divert irrelevant material, smooth over points of disagreement, and see that an swers are as conclusive and informative as possible

The group discussion Group discussion differs only in that the audience makes up the panel This is a difficult technic to use with a strange audience because its success depends partly on an alert and at least partially informed group. It requires a very skillful moderator if one is to avoid disaster. However, even an apathetic or a hostile audience can be managed by the group-discussion method if the moderator can keep his temper and is thoroughly familiar with his subject. The group discussion method is not to be chosen lightly by the novice.

The matter of questions from the floor must be given thought With one speaker questions will naturally come at the end of the program unless the meeting is extremely informal and the speaker invites interruptions "ith the program made up of several short talks on diverse subjects, it is smoother to allow time after each

paper for regulated and pertinent quostions. If it is desired to use a final discussion period for questions care must be taken to group the questions for each speaker and to orient the audience to prevent confusion. This same technic applies to the symposium but with less force because the speakers all are concerned with aspects of the same problem. In the panel and group discussions the problem does not arise because the entire program is a question and answer poriod rather it is important for the moderator to summarize or correlate the material presented and the conclusions reached.

ARRANGING THE SCHEDULE

Proper spacing and allocation of sufficient time to each element of the program is of the greatest importance \ost papers can be presented in 20 minutes but it is risky to schedule a pa per every 20 minutes without a short break to allow for introductions the mechanics of lights and equipment and most im portant time for questions or discussion. In many instances the discussion provoked by the paper is more valuable than the pa per itself A good plan is to use 00 minute presentations with 10 minutes between papers for the purposes mentioned above Even with these free periods it is well to hear in mind that it is difficult for the audience to sit still for a full half day Especially if there are no question periods a mid program break of 10 minutes should be allowed If there are previously desig nated discussants they must be allowed a definite time period to present their remarks still leaving time for questions from the floor The moderator has the essential but unpleasant duty of keeping the meeting on a time schedule Meetings should begin strictly on time and each speaker should be held to the time limit of which he has been previously informed Some speak ers are so discourteous to those following as to utilize all their allowed time in talking and then they expect an equal amount of time to show their lantern slides. If the moderator permits one speaker to monopolize the time of subsequent speakers those who follow are perfectly justified in declining to present their material with the simple statement that there is not ful ficient remaining time in order to do justice to the subject Finally in an all-day session sufficient time must be allowed for the audience to go to lunch taking into account transportation time as well as time for eating Lsually an hour and a half is better than allowing just an hour If there is to be an after-dinner speaker before resuming the session time and place for this also must be carefully correlated

DUTIES OF THE MODERATOR

The rost obvious duty of the moderator is the introduction of speakers Adequate introduction of a speaker is difficult and

has a number of aims First it should tell the audience who the speaker is what he is from the standpoint of titles, where he hails from or where his work was done and why, from the viewpoint of accomplishments in the field to be discussed he is fitted to address the audience Second, it must be sufficiently inclusive so that the speaker is relieved of the supposed necessity for reciting his own ments in order to be sure the audience is properly impressed. Third, it must avoid flattery or too flowery pronouncements which may embarrass the speaker by overstatement or maccuracy It is well to be careful of attempts at humor in the introduction of speakers unless they are well known to the moderator and he is sure of his ground Finally it is essential that the moderator remember the name of the speaker and that he pronounce it correctly Some moderators feel called upon to deliver part of the speaker's address for him, or at least sum marize his work. This is a reprehensible form of limelight grabbing

Almost equally important is the moderator's duty to call time on long winded speakers in order to keep the meeting on schedule. This has been mentioned previously, and if speakers decline to go on because the moderator has injudiciously allowed previous speakers to monopolize the time the moderator gets what he deserves

Vanaging the discussion period and the discussants is an art learned by practice Here again the moderator must be timeconscious and must discourage irrelevance Often, a discussant wishes to impress the audience by presenting a paper of his own and here the moderator must limit discussion to the paper presented by the speaker Critical and heated comments some times emerge and the moderator has the task of softening such criticism encouraging humbleness from all concerned Usually it is possible to give a verbal pat on the back before directing a well aimed, figurative blow at the speaker or discussant who gets out of line As a last resort the moderator might suggest that participants agree to disagree leaving the audience to make up its collective mind on the basis of material presented Finally. the moderator should remember to thank the discussors calling them by name if feasible He should also thank the speakers. even though the talk has been a poor one, because at least the speaker took the time to attend The moderator who makes a busybody of himself is a distinct nuisance and a real menace to the speaker Such a moderator is the one who continually jumps up to adjust the microphone change the lights erase the blackboard pull the shades up and down, or supply missing chalk and pointer All these matters should be done unobtrusively and before the speaker begins his presentation. After that, inter ruptions should be kept to a minimum and limited to emergencies

ADMINISTRATIVE ARRANGEMENTS

Much prior planning and administrative effort goes into the arrangement of a medical meeting. The arrangements to secure a speaker are presupposed but may require much correspondence. After this the scheduling of the program is necessary before the final notices can be sent out. This includes printing of suitable programs and release of proper notices to the press or organ izations concerned Physical arrangements include provision of a proper place suitable equipment in the form of teaching ands which actually function and trained operators who can get the lantern slides in right side up No detail is too small to arrange in advance a burned out bulb may stop the meeting cold or absence of chalk may dolay a blackbord lecture

Sometimes there are multitudinous administrative arrangements if the meeting is to last longer than one day Sufficient time always must be provided for rejistration of guests and administrative announcements Facilities for housing meals travel, mail phone calls transportation, and entertainment need consideration

SUMMARY AND CONCLUSIONS

A medical program should be planned according to one of the coveral styles discussed choice depending on subject matter type of audience and other factors Arrangement of the actual schedule should provide time for discussants questions from the floor a break to relieve the audience of monotony and meals

The moderator has a very important assignment in properly introducing the speakers limiting the time to conform to sched due directing the discussion making things run smoothly and yet keeping the spealight on the speakers rather than on himself Proper administrative airna, enonts plus a well organized program will ensure success

MEDICAL MEETING

The Soci ty of Mil tary Ophthalmologists and the Society of Military Orolaryngolog sts will hold a j int d nore and business meeting at the time of the annual meeting of the Americ n Academy of Ophthalmology and Orolaryngol gy in Che go n Oct ber 11. All nembers re invited to attend Appl 10 may be made either to Captain James A. Stokes MC. LSA. Walt: Reed Army H. p tail. Walt highor 12. D. C. or to Lieuceant Colonel Frank A. Petri. USAF (MC). 3650 USAF Hospital Box 495 Sampson A.1 Force Bas. N. P.

ADDRESS TO GRADUATING CLASS

Army Medical Service Officers Advanced Course Brooke Army Medical Center*

GEORGE E ARMSTRONG Major General MC USA

ALTHOUGH one does not leave 30 years of service, associations, and comradeships without regret I derive comfort from the realization that, as a retired officer of the Regular Army Medical Corps, I remain a member of this great family and in some respects can continue to serve the cause of the Army Medical Service I must admit, however, that the predominant feeling is that of pride—pride in having participated in the tre mendous job that the Army Medical Service has done in the past. The Army Medical Service has not only given an excellent account of itself in providing medical support to the Army in peace and in war, but has grown in size, experience, and stature to where it is better prepared than ever to accomplish its mission

It is natural that at this point in my career my thoughts are more on the past than on the future We all enjoy reliving our experiences and can derive value from evaluating our past thoughts and actions. Things look clearer in retrospect when all the trivia are forgotten and only the essence of experience remains. I hope that I will be forgiven if I allow myself to think aloud about some aspects of my tour as Surgeon General of the Army.

All of you are career officers Most of you are approaching the midpoint of your careers. This is the period where your training and experience reach a more advanced level. It is the point in your career where you attain leadership maturity. This is the stage where you begin to principate more directly and more actively in shaping the course of the Army Medical Service. The direction which the Army Medical Service takes at any time is determined by many factors, but none more important than the leadership given it at every echelon of activity.

I vividly recall the deep sense of responsibility I felt when I was informed that I had been appointed to succeed General Bliss as the Surgeon General of the Army This sense of re

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sponsibility will not leave me until the day I turn my office over to General Hays but at no time were there so many thoughts running through my mind so rapidly as at that time What course was I to set for the service? What were the major problems? What were the important things to be accomplished during the next four years? How should they be accomplished? I had served four years? How should they be accomplished? I had served four years as Deput Surgeon General and was well acquainted with the workings of the office I knew that soon I would become in volved in day to-day decisions of vital importance to the Army Medical Service with little time for the broader approach of outlining a long term course of action At the same time I knew that it was essential to set a specific course which would provide background direction and meaning to these day to-day decisions

The mission of the Army Medical Service has been expressed in many ways but it can be reduced to one basic aim—to provide the American soldier with the best medical care the country can afford This has been the aim of my predecessors in office it was my aim and I am sure it will be the aim of my successors. The Army Medical Service however is a very complex mechan ism. It has many facets—field medicine preventive medicine inpution care outpatient care research training supply administration and so on It is dependent on varied and scarce resources—money materiel facilities personnel It is not a free agent—it is an integril part of the Army and of the medical and allied professions, and its course and operations must be closely corrolated and interrated with that of the Army and to an appreciable extent with that of civilian medicine.

It is not too difficult to evaluate the mission of our Service in light of the Army strength deployment and mission and there from derive a desired course of action Objectives and policies for every facet of Army Medical Service operation flow normally and naturally from the basic mission and the situation. The prob lem is to translate the desired goals into realistic programs Infortunately sufficient funds and other means are not and probably never will be available to achieve all we desire. The basic problem therefore, is to keep a proper balance among the numerous activities involved in the accomplishment of the med ical mission and the available resources. The best possible medical service is not achieved by advancing training of person nel and neglecting to provide a plant and equipment that will permit full use of this training Conversely the most modern plant and equipment will not provide good medical service with out an adequately trained staff or corresponding advances in research However limitations of resources and many other factors often prohibit parallel development of interdependent elements of the Army Medical Service This is particularly true during sharp changes in the environmental atmosphere from peace

to war to demobilization to cold war, et cetera A proper balance between the various elements and facets of the Army Medical Service can be maintained only by periodically shifting emphasis from one to another so as to keep them in balance Thus, setting the course for the Army Medical Service at any one time is primarily a matter of determining priorities among the many objectives that contribute to the accomplishment of the medical mission. The determination of priorities must take into consider ation the achievements of the past, the most urgent problems of the present, and the probabilities of the future. The course of the Army Medical Service must be a continuous one, influenced but not interrupted by changes in the administration.

I should like to discuss the course set and some of the ac complishments made in the major areas of Army Medical Service operations during the last four years

FIELD MEDICINE

Readiness for combat operations is the primary objective of the Army support of the Army in the field therefore must receive the highest continuing priority among Army Medical Service operations. Combat operations in Lorea provided an opportunity to test and modify our units, equipment, and doctrine. We tried to correct our mistakes on the spot. In addition, we have had a series of symposia evaluating the horean experience in retrospect, and are incorporating the lessons learned into our tables of organization and equipment (TOE's), medical training bulletins (TB Meds) and other doctrinal media.

- a Professional advancements in the treatment of casualties were many Particularly significant were the advances in the use of plasma expanders and in the treatment of patients incurring burns and other trauma. The net advance can be judged from the results—the death rate was the lowest and the recovery rate the highest in the history of the American Army.
 - b Surgery was moved closer to the front lines than ever before
- c The Mobile Army Surgical Hospital (MASH) was fully tested and its use considerably modified
- d The principle of helicopter evacuation was firmly established
- e Other facets of Army Medical Service field operations were not overlooked
- (1) The use of assistant battalion surgeons (MSC) in battalion aid stations was re established and further advanced (2) A med ical intelligence detachment was included (in TOE 8 500) to fulfill the need for the performance of the medical intelligence

functions required by the Medical Service in the field (3) In 1954 a new veterinary hospital unit was established (as TOF 8 770 combining the capabilities of and replacing the old TOF 8 750 and 8 780) The new unit can care for small animals in support and 8 (80) The new unit can care for small animals in support of infants, scout dog platoons and other security units which use small animals (4) The medical social workers both en listed and officer were written into the table of organization and equipment of hospitals previously furnished medical social



Major G meral G org E A mist one MC USA Surg G ner l f the A my fr m 1 | ne 1951 to 31 M y 1955

work through the facilities of the American Red Cross (5) All Arms Medical Service tables of organization and equipment were reviewed and appropriate enlisted spaces were designated as noncommissioned officer positions to separate noncommissioned officer from specialist within medical TOE (6) All of the Army Medical Service equipment lists were revised. The latest equiprent and supplies have been included. This includes new type field redical treatment equipment such as operating tables and lamps dental treatment units x ray equipment and new type redical field chests Expendable supplies have been revised with a resulting reduction in total quantities carried by any unit

SUPPLY

I can state with confidence that the Army modical supply system has held a position of leadership over all supply services for a number of years My objective was to maintain and, if possible, advance this position. I am happy to report that we have not lost ground. Some of the major achievements in the last four years are

- a The Army stock fund and financial inventory accounting systems have been installed and extended to stations and over sea commands. The stock fund is a working capital fund for the acquisition and distribution of supplies. The Medical Service has been the first service to fully use the stock fund principle and others are now following.
- b Real unification has been achieved in the field of procure ment development, standardization, and industrial mobilization planning for medical material Although these triservice activities begin in 1946 the Armed Services Medical Procurement Agency (ASMPA) has made great strides during the past four vears The Hoover Commission has recommended that ASMPA be used by all Federal agencies for procurement of medical items in the same manner as now done for the Federal Civil Defense Administration
- c For the first time in the history of the Army Medical Service we have a balanced stockpile of medical material for a mobil ization reserve. It is currently valued at nearly 100 million dol lars, and it will greatly lessen the impact of any sudden mobil ization.
- d Our operating hospitals have been furnished with standby equipment to fill any immediate expansion requirements. This plan also served to disperse equipment for any emergency. Additionally, a number of inactivated hospitals have had their equipment placed in "mothballs" for the same purposes.
- e We have developed plans and procedures for the supply of whole blood to oversea commands and for a national stockpile of plasma expanders This program is also on a triservice basis for the Army, Navy, and Air Force
- f Management procedures have been inaugurated in all medical depots, first by installation of comptrollership for control pur poses, and secondly, by installation of a work progress reporting system and a cost analysis program

RESEARCH AND DEVELOPMENT

To assure that the best possible medical care is provided our soldiers we must continually conduct research in all aspects

of military medicine To obtain maximum return from our resources for research we must make full use of the products of civilian research and confine ourselves to the research problems peculiar to the Army Some very significant advances have been made in the last four years

- a Research in the repair of damage to major blood vessels reduced the amputation rate during the horean war to 60 or 70 percent of the rate during World War II This produced a greatly reduced hospital burden returned normal instead of handicapped men to their families and saved millions of dollars in disability pensions
- b The development of dextran as a substitute for blood plasma afforded the first effective cheap and relatively safe plasma expander Every unit of dextran procured in liquid human plasma represents an average saving of 20 dollars
- c The isolation of a group of viruses of which RI 67 is an example and which appear responsible for a large portion of acute respiratory disease is the first significant breakthrough in the study of the etiology of these diseases. The control of this group of diseases would materially reduce the time lost by recruits during basic training
- d The development of methadone hydrochloride as a synthetic substitute for morphine has relieved the United States of depend ence on uncertain foreign imports of opium for the manufacture of morphine
- e Primaquine is the first curative drug which has been found for the type of malaria most commonly encountered in our toops in overseas areas. This agent almost eliminates the danger from carriers of malaria among returning troops. It reduces military hospitalization time and protects our civilian population.
- f A successful prototype model of a portable x ray unit weighing 40 pounds that will provide roentgenograms in the field in less than five minutes has been developed. Using the radio-isotope thulium 170 as a source the unit will provide radiology service in forward combat areas where such service was not previously available for diagnosis of fractures and location of retained foreign bodies.
- g A new field typo dental entine has been developed which weighs 1½ pounds and can be operated off any vehicular battery as compared to the present standard ontine of about 40 pounds which requires a generator for operation. This new engine has a speed of 10 000 r.p. m. (versus the 2500 r.p. m. of the present tem) which increases the cutting efficiency of instruments decreases the patient's discomfort and saves the operator's time

TRAINING

The hub of the Medical Service is the professional and technical proficiency of its personnel

- a The internship and residency programs for medical and den tal officers serve a triple purpose They constitute the most successful method for procuring officers for the Regular Army Medical and Dental Corps, provide the varied specialists es sential to modern medical care, and raise the standard of medical service provided to our patients. The amount of internship and residency training given must of course be kept in line with the needs of the Army and with the facilities and teaching material available. The training program in our own hospitals has now been developed to a point where except for a few selected spe cialties, we have been able to eliminate our internship and resi dency training programs in civilian hospitals. The standard of our training program has been praised highly by the civilian leaders of the profession The high teaching standards maintained in our hospitals are reflected in a flood of applications for internships and residencies. This enables us to select the best of the graduates from medical schools The professional advance ment of the Medical Corps can be judged from the following figures
 - (1) The number of board certified medical officers increased from 266 in June of 1951 to 429 as of 30 April 1954 (2) Sixty six percent of the Regular Army Medical Corps officers are currently board certified or board-qualified (3) Another 18 percent are currently in residency training, bringing the total of those board certified or board qualified, or those in training for board qualification, to 84 percent of the Corps (This is based on primary military occupational specialty (MOS) and may even be higher if we take into consideration secondary MOS data)
 - b Important as is professional training, we must never lose sight of our basic mission, which is preparing our officers for staff and command responsibilities. This is particularly important as we lose officers with World War II and Korea experience and replace them with younger graduates. We have, therefore placed continuing emphasis on staff and command training, as you in this class are fully aware.
 - c Training is a continual process. All aspects of professional and military training are therefore promoted and encouraged through hospital training programs and school courses. As examples of this type of training the course in surgery in acute trauma conducted in all class. If hospitals received wide and enthusiastic acceptance. A course which brought military med icine up to the atomic age, and therefore of particular significance.

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cance is the one on medical care of mass casualties offered at the Army Medical Service Graduate School

- d We have not lost sight of the long range needs of the Army A triservice medical scholarship plan has been developed and proposed to Congress to ensure availability of doctors and den tists for the Army in the future
- e In view of the expression of aviation activities in the Amy we are training Medical Corps officers as aviation medical examiners. Uso Army Medical Service officers already qualified as helicopter pilots are being trained in certain aspects of helicopter casualty handling.
- f The clinical technician has proved his rightful place in the Nedical Service family. We have expanded the clinical technicians course to Letterman and Fitzsimons Army hospitals and are now graduating about 300 clinical technicians a year
- g The Medical I ducation in National Defense (MEND) program was introduced into five medical schools at the beginning of the 1952 1953 academic year The program designed to provide in struction in civil defense and military redicine is integrated into the regular medical curricula for all students
- h During the fiscal year 1954 the medical and dental ROTC programs were discontinued as uneconomical and unproductive it was recognized that the cessation of medical ROTC summer camps would decrease Army relations with medical college students and a substitute program was developed The clinical clerkship program was introduced to fill this need. This program provides an opportunity for medical college students between their third and fourth years to be employed for 6 weeks at a U.S. Army hospital at a monthly stipend of 183 dollars. Each student clerk is matched with an intern at the medical installation and has an opportunity to become familiar with medicine as practiced in Arry, hospitals. This medium provides for continuing good relations with medical colleges and medical students and operations are open coursement device for the Regular Army Medical Corps
- 1 In line with our basic mission high priority has continually been placed on all aspects of field training. The Surgeon Conoral was made responsible for the conduct of legistic exercise 1955 (LOGEX 55). I designated the Commandant Medical Field Service School as mineuver director for this exercise. A number of Army Medical Service officers were assigned to the staff of the manuere director for LOGLX 54 to gain experience for this task.
- 1 Professional and technical proficiency alone are not sufficient to produce the best in medical care. Interpersonal relation ships play an important role in the care of patients. A pamphlet

entitled "Interpersonal Relationships in the Care and Management of Patients" was developed which contained material for 1 hours of formal instruction emphasizing that courtesy, consideration, a sympathetic approach, and the golden rule are the keys to the problem of successful interpersonal relationships

k During the past 2 years we have introduced into our schools some 15 now courses Embracing the entire range of military medicine, and designed to meet the needs of both officer and enlisted personnel these courses illustrate the aggressiveness with which the Army Medical Service has attacked the problem of improving its professional, technical, and military training

MANPOWER CONTROL

The best-trained personnel are of little use unless they are in the right place at the right time. The Surgeon General has had control over the distribution of his professional personnel for a good number of years. I continued the policy of making professional personnel assignments on an individual basis, giving full consideration to each officer's career pattern and personal desires as well as to the needs of the service. The most important advance in personnel management during the last 4 years has been with regard to medical enlisted personnel. The two gains most worthy of note are

- a Creation of Medical Records Specialist (MOS 1305) This enables the retention in the medical service of personnel trained and experienced in medical records, reports, and statistics
- b Development of close co-ordination with major commands in the assignment of key medical enlisted personnel A proposal to establish Army wide centralized assignment control of senior noncommissioned officers, including those in the medical service, is under consideration by the general staff

MANAGEMENT

You have heard about, and many of you have had experience with, the large variety of management programs introduced in the Army in the last few years. We have made full use of these ideas, improving them and adapting them to the needs of the Army Med ical Service, which is a large and costly enterprise. I believe that management of this enterprise must keep pace with its growth and development. Every dollar and every person saved in one area can be fully used in another to improve and advance the Medical Service.

a I have already mentioned the Army stock fund and financial inventory accounting in relation to the medical supply system We have been testing the industrial fund integrated accounting, and some other programs at Valley Forge and other hospitals, U S ARMED FORCES MEDICAL JOURNAL.

and are slowly but steadily advancing in our plan to extend the financial management program to the entire Army Medical Service

- b I am proud to report that we were the first technical service to extend the Department of the Army Primary Program System both at headquarters level and in the field The Army Medical Service Program Document has now been in existence for over a year and represents in writing the complete and co ordinated programs governing all facets of operation of the Army Medical Service Much is left to be done to complete the change over from our old system of controlling and directing Army Medical Service operations to the Program System, but more than a start in that direction has been accomplished
- c I am also proud to report that we had introduced many as pects of management engineering in the Army Medical Service long before the term was accepted as a byword in the Army It has been used successfully in supply management and hospital operations for a number of years It has now been extended and expanded throughout all elements of the Army Medical Service Perhans the most noteworth accomplishments have been
- (1) The development and improvement of standard organization all structures for both Class II and Class I hospitals (?) The development of doctrine and methods of reducing hospitalization loads through the treatment of patients on a clinical basis (3) The successful experiments in contrainzed ward food service (4) The development of guidance for use of clinical technicians (5) The development of standards and factors for personnel staffing (6) The introduction of modern business machines and devices into our installations and activities.

PLANT

The weakest link in our long chain of activities and resources at the time I took office was the condition of our plant During World War II hospital facilities having been built on a temporary basis deteriorated rapidly However as long as facilities were available and funds were tight roplacement of these facilities was not permitted in the Army The Korean situation created a need for hospital beds and other facilities at a number of posts A plan to meet this need through construction of permanent hospitals was developed but repeatedly met with obstacles I made it a matter of the highest priority to put this plan into effect. We were finally successful in convincing The Army Staff The Department of Defense The Bureau of the Budget and Congress that it was in the interests of economy and good medical care to begin replacing outworn facilities with permanent structures. The situation at present is somewhat as follows:

a Hospitals at Fort Knox and Fort Belvoir are under construction Hospitals at Fort Bragg Fort Benning Fort Monmouth and

Fort Riley are scheduled to be under contract by the end of this fiscal year

- b Construction of a hospital at Fort Dix has been approved and will most probably be initiated next fiscal year
- c The Armed Forces Institute of Pathology is now housed in a new modern building at the Walter Reed Army Medical Center
- d Many new facilities to meet various needs, such as nurses' quatters, barrack buildings, laboratories, holding facilities for animals, and medical warehouses have been or are being con structed at many of our installations and activities
- e It is realized that so huge a replacement program as is required cannot be completed in a few years. In the meantime, we must continue to operate in many temporary buildings which have seen considerable wear. An additional problem has been created by the fact that the sharp drop in the hospitalization rate, combined with the contraction of Army strength, has reduced patient loads far below the original capacity of any of our hospitals. This means scattered operation. At the same time, the increase in dependent care has made many of our obstetrical facilities inadequate. To the extent that funds could be made available, rehabilitation of facilities to meet the most immediate needs and to consolidate operations has been carried out in many of the hospitals.

HOSPITAL OPERATION

I have left hospital operations for last because it is the recipient of, and in itself embodies, the advancements in supply, training, manpower control, management, plant, and other facets of our activities. The advances made in hospital operations can be summed up in two figures. The hospitalization rate—that is, the number of beds occupied per 100 troop strength—has decreased from over 2 percent in 1951 to 1 1 percent at this time.

RELATIONS WITH OTHER AGENCIES

I must not forget to mention one very important advancement during the last four years. The Army Medical Service has many special and unique problems. Procurement of medical professional personnel is perhaps the most acute of Army procurement problems. The health of the Army depends on close integration of preventive and therapeutic medical activities throughout all echelons of command. For example, the hospital system to be effective must be operated as a totally integrated system. To an appreciable extent the operation of the Army Medical Service must be closely co-ordinated with parallel services of the Arr Force and Navy, with other Federal services, and with civilian medicine. This takes administrative shape in the segregation of medical problems from other problems at practically every

1170 echelon of Government-Assistant Secretary for Health and Medical at Department of Defense level Medical Branch at the Bureau of the Budget level separate representation at Presi dential level (Doctor Rusk) separate consideration at Board and Commission level (such as the Hoover Commission) and so on All of this often results in dealing with Army Medical Service problems within the Army as an exception and deviation from normal Army staff and command relationships Although these factors are fully recognized by all concerned they could readily precipitate what might be called relations problems. As I have mentioned previously the successful accomplishment of the medical mission depends on close co-ordination and co operation between all elements with an interest in the Army Med ical Service I have been very conscious of this fact throughout my tour as Surgeon General of the Army I am happy to report that relations between the Army Medical Service Army Staff the Office of the Secretary of Defense the Bureau of the Budget

may have differences of opinion at times but we have all learned that our end goal is the same and that we can and should find CONCLUSION

a mutually acceptable course

higher governmental bodies and civilian medicine have never been better than at present We are truly working together We

To have rendered an account of my stewardship to this group here seems to me particularly appropriate As of today you of ficers will begin to assume an increasingly important role in establishing the future course of the Army Medical Service By the same token you will be charged with the responsibility for maintaining that course

The advances made during my tenure as Surgeon General should not be attributed to me nor would it be proper for anyone to infer that their accomplishment was due solely to my stimulation. To repeat once more a thought that has been expressed in one way or another many times The progress of the Army Medical Service is a continuing process in which past accomplishments inspire us to the solution of present problems in which we must avoid the mistake of living in the present and in which we must an ticipate tomorrows problems with an overwhelming confidence in our ability to furnish tomorrows solutions. It is my fondest hope that I may have aided in accelerating that process The happy circumstance of striding forward in seven league boots has not always been our lot but we have consistently fought to shear off the leg irons of stagnation

Four years ago I was named captain of a strong well condition ed winning team a great honor indeed But surpassing even that is the honor and pleasure that has been mine in being a member of this wonderful family of ours for the past 30 years

THE BATTALION SURGEON

DOUGLAS LINDSFY Lieudenant Colonel MC USA

THE TASK of battalion surgeon is one of the most important and, at the same time, least understood in the medical service Of all medical officers, the battalion surgeon is the most appreciated by his prospective patients. The duty is least appreciated by the prospective incumbents.

Certainly the position is surrounded by more confusion and contradiction than any other medical officer position that I know of The confusion is both amusing and alarming in a short span of time you can hear such conversational mirror images as those

We need the best men in the forward medical installations

We need two Medical Corps officers in the battalion

The battalion surgeon is the key officer in the field medical service

The battalion surgeon must have good surgical judgment

As a battalion commander I couldn't do without my Doc

We can t use him for anything else send him to a division

A professional officer is wasted on battalion duty

We can dispense with the battalion surgeon more readily than any other Medical Corps position

The battalion surgeon is limited to the performance of first aid

No need to call the Surgeon he is not concerned with this plan

Most of the conflicting opinions which I would place on the erroneous side of the table appear to come from those who I now the least about the job. They are from people who have never been a battalion surgeon, or have never seen a good battalion surgeon work. Some of the opinions which are sweeping assumptions pertaining to professional functions are offered by those without professional background. But there are some flagrant exceptions. Even the battalion surgeons themselves may differ

I don t like the living con ditions I don t like being shot at and I surely would like to be in the operating toom again but I can t think of a place where I could do more good I m wasting my time here

Fom B k Atmy M d cal Ce t F t Sam H ust T *

I have observed some battalion surgeons who completed their combat tour and rotated without ever having learned what their duties were

Frankly I am at a loss to explain why the uncertainty and the inconsistency exists When I went to my first assignment as a battalion surgeon I knew pretty well what to expect I had been told about it at the Medical Field Service School My ex pectations were realized Through four succeeding battalions (two in the states and two overseas) I learned a little more each time about how to perform the duties of the position but I never got any indication that my basic conception of the position was wrong

My own days as a battalion surgeon were ended after World War II But during the war in horea I was fortunate enough to have duty that permitted me to spend a considerable amount of time in and around aid stations Because battalion surgeons rotated more frequently than did staff officers in rear headquarters I had the privilege of talking to battalion surgeons numbering in the hundreds I still have essentially the same concept of the battalion surgeon that was presented to me in my own initial training The only change is that the job has gotten bigger matching the increasing complexity of modern medical science and modern warfare

Today it appears that too few people have this same picture

When did the basic concept change? Or has it changed at all?

Who is interested in promoting a depreciation of the importance of the battalion surgeon? Or is there anyone interested in doing 902

And when did the Medical Field Service School start teaching a doctrine different from the one they taught me? They did not The teaching is the same today

let we are hearing a great deal more about the limitations of the battalion surgeon s lob

If too few people understand clearly what the battalion surgeon is actually supposed to do then it may be worth while to review his duties

The battalion surgeon is responsible to his commander f r the treat ment of casu lts s on the battlefield by aidmen he has trained-and their collection and evacuation to the aid station by litter bearers under he control

He treats and returns to duty those ca ualties whose wounds are ame abl to definitive tre tm nt in the forward area

He initiates the professional medical treatment of those who must be evacuated to the rear and evacuates them in the best possible clin real condition

He is the medical advisor to his commander

He is the physician for a community of a thousand men living in a primitive environment and engaged in a hazardous occupation

He commands the medical detachment of the battalion trains it and directs its employment

This is nothing new to anyone But it seems that it is not alone enough to spell out the scope of the responsibility and the degree of importance of the task

All in all, the job of the britation surgeon is to conserve the fighting strength of the battation. This may be the clue. The less serious the wound, the greater the potential for salvaging a fighting soldier but the more subtle and more intricate the medical decisions involved. The more serious the wound, the more outdent the diagnosis and the clearer the basic plan of treatment but the more important are the touch and go quick decisions and little modifications of treatment that make the difference between saying and losing a human life.

Here are my own ideas on "who is the battalion surgeon?" and "what does he do?"

KEYSTONE OF THE FIELD MEDICAL SERVICE

The battalion surgeon is the least dispensable person in the medical service Yet if we lost him the loss would not be readily evident in the popular statistical measures of medical service. More patients would die before reaching hospitals, and fewer would die in hospitals. Too many of us have forgotten that the hospital receives only those patients who have been successfully treated by the battalion surgeon. The patient who dies in the aid station or forward of the aid station, does not appear on the mortality rolls of the surgical hospital. But every patient who dies in the hospital represents first of all the success of the battalion surgeon (albeit often temporary or partial success), and the failure of the hospital. On this matter I quote Brigadier General L. Holmes Ginn, Jr. a good physician who has devoted his career to field medical service "It is very seldom that a life is saved in the rear of the battalion area" and "The life lost in the battalion and station is never restored in the elaborate hospitals in the zone of the interior."

More than any other medical officer, the battalion surgeon can influence the course of battle by returning selected wounded men to duty. A good battalion surgeon can treat and return to duty.

from the battalion aid station some 30 percent or more of the wounded. This is not a theoretical textbook figure. It represents the average aid station WIA return to duty rate of selected field units who were known for their good medical service. This result is not automatically attainable. In some divisions and battalions it has been as low as two percent. In these units the other 28 percent usually gets returned to duty sooner or later But a trip to the regiment and back takes a day or not less than half a day A trip to the clearing station and return measures several days And this time is lost at the moment it is the most valuable—at the height of the battle The squad or platoon needs its replace ments now not tomorrow night or next week when it is in reserve The battalion surgeon can furnish one third of the replacements it requires Best of all he can furnish trained replacements who will not be faced with the problem of integrating their individual skills with the function of the team Lach man fills his own vacancy

Besides the immediate salvage of one third of the battle wound ed the battalion surgeon can return to duty from the aid station one half to two thirds of the neuropsychiatric casualties

The man who can perform these feats is indispensable to the medical service But isn t this an easy task? Couldn't this be done well enough by technical or subprofessional personnel? The answer is no Surely we do not wish to leave the decisions in the treatment of neuropsychiatric patients to a technician or to aggravate or fix an otherwise transient and reversible neurosis by changing to an arrangement that requires evacuation of all these patients to the rear For the wounded the answer is more definite but perhaps less evident The application of a splint to an obviously shattered extremity is a job that can appropriately be delegated to a trained layman The decision as to whether a 3 mm laceration above the nipple can be dismissed with a band aid a tetanus shot a Purple Heart and reassurance or whether it means a chest tap and a call for a helicopter can legally and ethically be made only by a physician Beyond rules and codes the decision can be arrived at only on the basis of professional training and experience

DUTY IS PROFESSIONAL

The first time that I heard the pronouncement that the battalion surgeon practices only first aid I was sympathetically embar rassed for the speaker's ignorance. As I heard it more and more I became mildly irked \ow I openly rebel

As I recall it I had a pretty good working knowledge of first aid between the ages of 12 and 50 But when as a junior medical student I put on a white coat and took a job in the emergency room of a small private hospital to spread my budget with free meals of red beans and rice, I began to learn something that was entirely different Since the time I finished medical school I have administered little first aid, but I have practiced a good bit of traumatic surgery under field conditions Is a tracheotomy first aid," even if it is done with an unsterile scalpel under the head lights of a jeep? It has been done by an aidman, but is this the rule or a distinctly unusual exception? When a patient walks into the aid station complaining of pain in the left shoulder after a truck accident is it "first aid" when you diagnose a ruptured spleen? And we may even consider the less dramatic cases I recall one instance of a simple foreign body in the eye We were on a troop train A patient was referred to an aid station located in the coach carrying the medical detachment and battalion head quarters of an infantry battalion The battalion surgeon instilled tetracame hydrochloride He sharpened a toothpick into a flat spud dipped it in alcohol, and let it dry He used it to spud out all the fragments of a cinder which was well embedded in the cornea He bandaged the eve and followed the patient closely for several days

Was this "first aid"? Read the Field Manual 21 11, Training Manual 8 230 and the American Red Cross' First Aid in Illness and Injury What would have been the procedure of first aid for the handling of an embedded foreign body? The train would be stopped at the next station. The patient would be put off and sent to a hospital Days would pass before he would catch up with the unit And that particular patient happened to be the division surgeon!

Anyone who holds that the battalion surgeon can only administer "first aid" has a biztre definition of the term Or if his understanding of first aid is correct, and he really means to say that professional talent is not utilized in the hid station, I can only guess that he has never been a battalion surgeon Occasion ally I have heard a bittalion surgeon complain legitimately that his professional talents were wasted but he actually meant his specialty talents. The strongest example of this that I have seen was the board certified ophthalmologist who somehow wound up in a battalion aid station near the end of the war in horea

As I have mentioned there are a few battalion surgeons who will complain that their basic medical professional talents are not required The few times I have heard this it was from surgeons of battalions who had been long in reserve, or on line on a very quiet front. And in each instance I think that the division surgeon failed in one of his most important duties—that of selecting for battalion surgeons men of initiative judyment, and, if possible, experience in the surgery of trauma Certainly the division and

regimental surgeons concerned failed in their duty to train and supervise the battalion surgeons under them

I often think back to the exemplary actions of three officers who were the very best all around battalion surgeons I have ever known After I had seen them work in their aid stations I became interested enough in their backgrounds to look up their records One had had three years of formal training in obstetrics before he went to an aid station one was a research internist and one was board eligible in surgery and asked for aid station duty pending a vacancy in a surgical hospital If the job of the battalion surgeon is first aid" it is strange that it takes a highly skilled professional officer to do it really well

BASIC DUTY IS SURGICAL

In percetime and to a lesser extent when the battalion is in reserve status in the combat zone the professional function of the battalion surgeon is comparable to that of general practice But it is a basic premise that the function of a military unit is to fight or to be so well prepared to fight that a potential enemy knows that he will be beaten and consequently does not force an issue

In combat the battalion surgeon is engaged in the management of patients who have sustained formidable trauma. The photographs of a battalion aid station in action bear virtually no re semblance to a surgical amphitheater or even to a hospital emer gency room But the patients and procedures are surgical Cer tainly the aid station bears even less resemblance to the medical clinic the obstetrics ward or the waiting room of the family physician

HE IS NOT PROFESSIONALLY LIMITED

The system of echelons of maintenance within the army is not based on how much or what type of work is done at each echelon but primarily on who does it

In the starkly simple words of the manual the battalion sur geon is supposed to initiate the professional treatment of the casualty and prepare him for evacuation These are pregnant words Before the casualty is ready for evacuation everything must be done for him that is necessary to be done to insure that he is prepared to survive the trip to the rear and will arrive at the rear medical installation in fit condition to withstand the treatment procedures which will be carried out there It is un fortunate that the writers of the manual saw fit to use the word restricted to put over their point that the most frequently per formed procedures in the aid station are designed for the control of hemorrhage the immobilization of fractures and the treatment of wound shock (FV 8 10 par 63 b (3))

These are not easy things to accomplish, particularly the broadly inclusive problem of the management of shock. They may require some heroic or delicate, though not elaborate, surgical procedures. The battalion surgeon may do compunctures or cut downs on all four extremities in order to infuse blood and plasma expanders at a life saving rate lie may cannulate the femoral vein lie may risk removing a tourinquest in order to effect better hemostasis by clamping, or ligation lie may have to make successive chost taps in order to judge whether a patient can survive execuation without bleeding to death into his pleural cavity. He will do tracheotomics—to insure adequate respiratory exchange in a patient with cerebral trauma to establish an air way in a patient with a neck wound to permit pacling of a blooding orophary ni call wound, or even just to male repeated trachoobronchial suction more dependable.

The only real limiting factors in the extent of treatment at any modical installation are the professional ability of the medical officer, his equipment, and the implications of the tactical situation

Whatever must be done to ensure the life of the patient during subsequent evacuation, that the battalion surreon must do if it is within his professional ability and the equipment he has at hand And he has good equipment I have been on emergency room duty in university hospitals and major military hospitals With a very few exceptions I believe that the battalion surgeon has equipment just as adequate He has tubes and cathoters, oxygen and lights, sterilizer and splints, otoscope and political moscope and needles, syringes, clamps, and sutures For suction he will have to use the ear syringe with a catheter, or requisition an asopto-type syringe, or rig up the windshield wiper vacuum line of the jeep If I were goin, back to duty as a battalion que geon I would take my own personal stethoscope, whose ear pieces have been worn to fit me, and my own personal head mirror and bringer | mirror And I would immediately requisition some favor ite me lications and minor items of expendable equipment. This latter is something many modical officers do not realize. If they need a 3 way stopcock they do not have to wait several years for a recommended change in table of equipment to be processed The item is in the catalo,, it is expendable, it can be requi sitioned

HE IS NEIDED IN PEACE OR WAR

The battalion medical detachment has a professional mission it cannot prepare for that mission without professional guidance. This is a basic requirement, but there are others that point to the need for the battalion medical officer in the unit in general reserve as well as the unit in combat.

made time and time again that an executive who devotes his primary attention to housekeepin, is not helping his commander shoulder the load

Similarly the command and administration of a medical detachment is no great burden. It is a minor part of preparing the unit to give medical service to a battalion in action and in keeping that medical service running smoothly when the pay off comes

DUTIFS RELATED TO TACTICAL ACTION

This relation is sometimes obvious and straightforward some times subtle and indirect

An aid station location which is ideal in all other textbook requirements is not ideal or even satisfactory unless it is so related to the tactical operations of the companies that it actual ly provides them with effective medical support Modical service is not automatic it cannot be stockpiled and requisitioned it cannot be delivered on call. It must be planned and the planning must be continuous in order to keep the medical support up-to-date in a constantly changing situation.

The battalion surgeon must be a bona fide member of the battalion. He cannot be a transient visitor or a civilian consultant under contract. Unless he feels that he belongs to the group he serves he will not endure the hardships and danger and expend the extra effort that the best service to them requires

JUDGMENT DEMANDED

We have much to learn from the medical service of the Marines They have two medical officers in the infantry battalion and they use them well I have never heard the junior of the two complain that he was not needed or that his duties were administrative Most of the company grade medical officers are given experience in aid stations before they go back to positions in the medical battalion

The reason I bring up the Marines is to quote their teaching on judgment. The battalion surgoon must retain coolness and calmiess and must show a near perfection of surgical judgment under the most adverse conditions. Surgical judgment is that indefinable but essential attribute compiled of just the right mixture of a stable nervous system past surgical experience common sense and an ever ready diagnostic ability. It seems the needless sacrifice but wars are won by sending the best mon to the front for only the best possess the essential qual tites necessary to ensure victory. Like the legendary criterion of the good army rule (a kindly look in the eye) surgical judgment is difficult to describe but easy to discern

The battalion surceon is faced with the necessity of making surgical decisions in major traumatic cases with a rapidity and frequency that is never seen in private surgical practice. But some of his most difficult decisions are the smaller ones. I recall the case of a lieutenant who twisted his ankle when he stopped in a hole in the dark. The ankle was badly swellen and painful in civil practice the first step would have been to have a reent-genogram made, but in this instance it would have required at least 6 hours of the officer's time. And this officer was needed in less than an hour to adjust and control the mortar preparation preceding an important attack. The judgment of the battalion surgeon was for sprain, and not fracture, and for initial treatment by strapping instead of cast. The officer was delivered to his observation post by litter jeep, minus a boot, and plus an ad hesive plaster splint. He fulfilled his mission

Can we pass the responsibility for such decisions to a man trained in "first aid"? Or can we even pass such responsibility to one of our less experienced or less decisive physicians?

In summary the battalion surgeon is the most important man in the field medical service. He must be the best professional man and the best medical soldier of the medical officers we have available

REFERENCE

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PENALTY FOR POOR PENMANSHIP

Druggists and the examiners of the Royal College of Obstetricians and Gynaecologists are taking steps to make British physicians improve their handwriting according to the London Daily Express Tired of the traditionally illegible penmanship of doctors the examiners say that physicians who seek diplonas will lose marks for bad handwriting Examiners now make it a point of professional honor to avoid penalizing applicants for poor penmanship

The pharmacists complained that physicians prescriptions as a way were so difficult to read that dangerous dispensing mistakes easily could be made the paper stated

-From GP p 133 Sept 1953

CASE REPORTS

Fulminating Meningococcemia and Meningitis With Vascular Collapse

Report of a Case of Waterhouse Friderichsen Syndrome With Recovery

SANTINO J LERRO C I I MC USA

A CUTE FULMINATING meningococcemia marked by petechial eruption and bilateral adrenal hemorrhage and now known as the Waterhouse Firderichsen syndrome was first de scribed by Voelcker in 1894. This syndrome was subsequently reported by several observers before the report of Waterhouse in 1911 and that of Friderichsen in 1918.

Waterhouse reviewed 14 cases from the literature and described apid breathing and cyanosis in his own patient Friderichsen in describing this illness in a six month old child noted eva nosis coma with Chevne Stokes respirations and a petechial rash that chan,ed to purpure patches before death Small gram negative diplococci not identified as Nesseria meningutals (moningococcus) were obtained from postmotion blood culture Microscopic examination showed considerable hemorrhage in the adrenal gland most severe in the zona reticularis and the central part without evidence of necrosis

In 1916 MacLagan and Cooke associated \$\lambda\$ meningitidis with bilateral adrenal hemorrhage. They distinguished between two fulminating syndromes with adrenal hemorrhage. In one consciousness persists to the end and the spinal fluid is clear in the other there are meningeal signs followed later by general flaccidity stertorous breathing cyanosis and turbid spinal fluid Daniels reported that 50 percent of 196 patients dying of fulminating meningoaccemia with adrenal hemorrhage did not have meningitis. His study showed in inverse correlation between the duration of life and the degree of adrenal hemorrhage.

Until 1940 when Carey reported a case of Naterhouse Friderichsen syndrome with recovery the disease was considered universally fatal Weinberg and McGavack found that up to 1945 only 12 cases with recovery had been reported This

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small number of recoveries is in sharp contrast to the favorable prognosis given to meningococcic infections in joneral since 1940, with reported recovery rates of 9.5 to 98.5 percent in 18 Several investigators 17-20 reported finding alterations in blood chemistry characteristic of advanal insufficiency in patients with severe infections, and suggested that the circulatory collapse occurring in severe infections is due to adrenal insufficiency. There are a number of reports of the successful use of advanal extract and sodium chloride in combating peripheral collapse in infections, 18 21-214 and of their unsuccessful use 23 24 More recently, nine instances of recovery from the Waterhouse Friderichson syndrome with the use of cortisone were reported 27-24

This case of fulminating meningococcomia and moningitis (Natorhouse Friderichsen syndrome of the encephalomy clitistype) is reported because of (1) the dramatic recovery of the patient from a profound state of shock of about 3½ hours' duration when treated with massive doses of aqueous adrenal cortical extract in addition to desoxycorticosterone acetate, antihotics, fluids, and electrolytes (2) the development of acute arthritist of a single joint during the active stage of the disease, and (3) the development of hypopotassemia early in the course of the disease

CASE REPORT

A 23 year-old soldier was admitted to the emergency room of this hospital on 4 February 1951 in a profound state of shock. He could be roused only with great difficulty. There was a 2 day history of headache and wealness of the right arm. Nausea frequent vomiting and pain in both lower extremites appeared on the day of admission. He was brought to the hospital after he had collapsed in his quarters.

Physical examination on admission revealed an acutely ill prostrate sensituporous white man in profound shock. The rectal temper time was 101.4° F. The radial pulses were imperceptible and blood pressure was unobtainable in either arm. The respirations were 24 per minute and shallow. The patients skin was ashen gray and his lips fingers and toes were cyanotic. Lis extremites were cold and he was perspiring profusely. A raculopapular rash was present on the dorsum of each wrist. A few sea tered lesions were visible over the chest abdomen upper thighs and on the hard prize Small subconjunctival hemorthages were present bilaterally. The kin lesions were rounded well-defined raculopapule, with dak center surrounded by a pink zore and measured 3 to 3 mill sore. The pipils were contracted and did not react to light Fundurcopic exmination to vealed slight bluring of the diac magin bilaterally. The lurge were committed operculation and assemblation fear trees were of pore quality and distart. The heart me was 104 to 120 per numer with a regula

rhythm No cardiac murmur were present. The abdomen was flat and soft no ma es were palpable Bowel peristalsis was normal The deep tendon refl xe w hypoactive throughout but def n tely more decreased on the right. The planta response was flexor and the kernig and Brudzinski signs wer markedly positive There was definite weak ness of both upper and lower att mits a Find age of the remaind r of the neurolog c xaminat on cluding examination of the cr ni l nerves we e norm I Exam nation of the blood revealed an erythrocyte count of 47 million per cu mm hem globin 13 grams per 100 ml hematoc it 41 percent and edimentation rate 20 mm per hour (Win trobe) The leukocyte count was 21 400 pe cu mm with 88 percent neutroph Is 8 perc nt lymphocytes and 4 percent monocytes The cardiolipin test for sigh lis was neg tive Urinalysis revealed a specific gravity of 1 019 and ther was 2 plus r action for albumin Microscopic ex m n t on f the urine was negative Lumbar runcture revealed a faintly turb d flu d contain ng 370 l ukocytes per cu mm with 80 percent neutroph Is and 20 percent lymphocytes Spinal fl d sugar was 92 mg per 100 ml and plote n was 198 mg per 100 ml Gram n g tive d plococci were d ntif ed on direct smear of the sp n l fluid Blood and spinal fluid culture performed on admission a dire ported 48 hour I ter rev aled a gram eg t ve diplococcus ident fed morphologically brochemically and ser logic lly as N meninettidis

One unit of plasm and I lit of a one s ath molar sod um lactate with 5 grams of od um sulf d az n added w g ven i travenously in the emerg ney room On adm on to the w rd 40 ml of adrenal cortical xtr ct w e inject d intr ven u ly and the pat ent was pl ced an oxygen tent No blood pressure was obtain ble in either arm for 3 hours and 15 m nute after admi ion During this period the p tient ece ved 120 ml of ad enal cortical ext ct tra enously 20 mg of de oxyc rticostero e a et t d 1 ml of adrenalin (brand of epi nephr e) in o l ntramuscularly. During the first 9 hours after admission be received a total of 160 ml of adrenal cortical extract intra venously 40 mg of des xyc rescosterone a t te and 1 ml of adren alin intr muscularly Cry t Il e pen c Il n G 240 mg (400 000 units) intratuse larly was given ev y 3 hours. The first blood pres ute r ad ng was 98/60 mm. He and the pul e rate at this time was 104 per m nute F ve h ur aft adm ion the blood pr s ure was 110/80 mm Hg the dal pul was 110 per minute and of good volume The color mpr ved but th pat ent continued to perspire profu ely 11 rem med extremely e tles and confu ed requiring restraint for many hours. The were frequent was ry stools and urinary inconti ence during the first 20 hour f ho p tal zation. The eafter the pat ent was oriented but maned v y drow v he continued to retch vomit frequently through the third hop tald y Who the intravenous dos se of d nal c nts al extr ct was duc d to 5 ml every 4 h urs the systolic blod pre ure was not d to f ll The dos ge was then increased to 5 ml e ery 2 hours. The after the sy tolic pressure mse slowly and ma ned steady between 104 nd 108 mm Hg

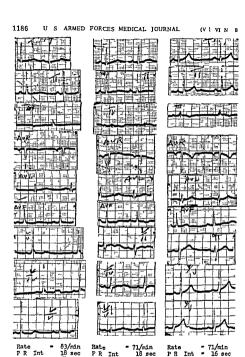
On the third hospital day the eightrocyte count was 3 94 million per cu mm hemoglobin 125 grams per 100 ml hematocrit 38 percent and sedimentation rate 40 mm per hour (Wintrobe) Urinalisis showed a specific gravity of 1 024 with 3 plus reaction for albumin and 1 plus reaction for sugar Microscopic examination of the urine showed no sulfonamide crystals present Serum chloride was 493 mg per 100 ml CO, combining power 74 volumes percent blood urea nitrogen 13 1 mg per 100 ml and blood sulfonamide level 12 0 mg per 100 ml A roent genogram of the abdomen was made to rule out possible intestinal obstruction suspected because of persistent vomiting and abdominal cramps with moderate abdominal rigidity and distention. No abnormal calcifications or gas accumulations were observed. The electrocardiogram at this time revealed prolongation of the Q-T interval and S T segment and T wave changes compatible with hypopotassemia (fig. 1A) Nasal gavage was begun with 60 ml of orange juice and milk every 2 hours One gram of potassium acetate was mixed with the feedings 4 times a day. The urinary output during the 24 hour period of the third hospital day was only 720 ml despite 3 liters of fluid administered intravenously. The vomitus totaled 1 200 ml. After the introduction of potassium acetate orange juice and milk there was remarkable im provement in his clinical condition. Vomiting ceased abdominal cramps subsided distention and rigidity decreased markedly and the urinary output increased. The nasal tube was removed on the fifth hospital day and a soft diet was started Orange juice and milk were given ad lib potassium acetate was continued in 1 gram capsules with food 4 times daily

On the fifth hospital day the pulse rate decreased to 50 per minute while the blood pressure was 128/60 mm Hg "ith this change adrenal cortical extract was then administered intramuscularly and the dosage of adrenal cortical extract and desoxycorticosterone acetate was gradually reduced until they were discontinued on the seventh and eleventh hospital days respectively

On the seventh hospital day after the patient had received about 15 grams of potassium accetate orally 1 liter of orange juice and milk daily for 4 days and 2 days of a soft diet the serum sodium was 142 mEq/L and the serum potassium was 31 mEq/L. The serum chlorade was 513 mg per 100 ml and the CO₂ combining power was 54 volumes percent At this time the electrocardiogram showed only slight improvement when compared with the previous tracing (fig. 1B)

On the eighth day of illness the patient exhibited a red hot swollen painful right elbow without evidence of effusion. The temperature rose to 101° F. Roentgenographic examination of the elbow point was nor mal. The elbow was splinted elevated and warm moist heat was applied. The temperature remained between 100° and 101° F. to the

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fifteenth day of illness. Thereafter the patient was afebrile. At this time because of nausea and heartburn the dosage of potassium acetate was reduced to 3 grams orally every 24 hours. The right elbow showed marked clinical improvement and the petechiae had disappeared. After the thirteenth hospital day, the patient had no complaints and felt well.

A lumbar puncture repeated on the fifteenth day of illness revealed 1 leukocyte per cu mm sugar 41 mg per 100 ml and total protein 342 mg per 100 ml Blood and spinal fluid cultures were reported to be sterile after 2 weeks incubation. The first normal electrocardio gram was reported 16 days after the onset of illness and 11 days after starting potassium acetate orange juice and milk followed by a normal diet (fig. 1C). Penicillin and sulfadiazine were discontinued on the twenty second and twenty-fifth hospital days respectively. The patient was sent on a 12 day convalescent leave on the twenty ninth day of illness and returned to full duty on the fifty seventh day of illness.

DISCUSSION

Recovery of patients clinically manifesting the Waterhouse Friderichsen syndrome who received adream! hormones in addition to sulfonamide therapy has been reported 13 14 27-29 35-39 Not all patients with acute fatal infections particularly not all adults exhibiting the Waterhouse Friderichsen syndrome, have been found at autopsy to have had massive adrenal hemorrhage 17 19 35 kinsman and others? were unable to distinguish clinically those patients who exhibited massive adrenal hemorrhage at autopsy from those who exhibited only degenerative changes in the adrenal glands

Rich¹⁷ reported the association of adrenal cortical damage with acute infections and suggested the possible relationship of circulatory collapse to this adrenal damage Ebert and Stead 40 found that shock accompanying severe acute infection differs from that following trauma or hemorrhage because in infection the plasma volume is not decreased and transfusions are not beneficial It is not due to a diminished venous return to the heart from pooling in the smaller vessels, because filling of the venous system does not improve the circulation in a patient with Waterhouse Friderichsen syndrome who recovered, Grub schmidt and associates convincingly demonstrated that the blood pressure is definitely affected by the administration of adrenal cortical hormones Others¹ 27 28 have recorded this same effect in patients who recovered In view of the now recognized importance of the adrenal cortex in the maintenance of blood pressure it seems probable that the cortical lesions described by Rich may at least be a contributing factor in some instances of circulatory collapse during acute infections

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Our patient recovered within 3 hours and 15 minutes from a severe state of shock, after receiving adrenal cortical extract intravenously, desoxycorticosterone acetate, adrenalin in oil intramuscularly, plasma, fluids, and sulfadiazine intravenously A minor toxic effect from the administered adrenal hormones was observed on the fifth hospital day after he had received 300 ml of adrenal cortical extract and 85 m, of desoxycorticosterone acetate At this time, the blood pressure suddenly rose from an average of 110/75 to 128/58 mm Hg and the pulse rate dropped from 75 to 50 per minute (fig 2) Adrenal cortical extract was subsequently given intrimuscularly instead of intravenously, and the dosage of adrenal cortical extract and desexycorticos terone acetate was gradually decreased Only 3,500 ml of fluid intravenously was given during the first 9 hours after admission Thereafter, no more than 3 liters of fluids were administered intravenously in a 24 hour period

The patient developed clinical evidence of hypopotassemia by the third hospital day, evidenced by mirked weakness, lassitude, drowsiness, and abdominal crimps with distention at a time when his general condition was improved Electrocardiographic evidence confirmed this clinical impression

The above symptoms definitely lessened with the administration of potassium acctate and foods high in potassium content (orange juice and milk). The development of hypopotassemia, as noted by others, ' 'was attributed to excessive vomiting, diar rhea and dehydration as well as to the administration of intravenous fluids and large doses of adrenal cortical hormones.

On the seventh hospital day, serum sodium was within normal limits (142 mEq/L) but the serum potassium was only 31 mFq/L despite the administration of 4 grams of potassium acctate daily for 4 days, in addition to liberal amounts of orange juice and milk orally. It should also be noted that the electrocardiogram returned to normal 11 days after treatment with potassium acctate, crange juice and milk was started

Acute arthritis of the right elbow occurred in our patient on the ninth day of his illness Fox and Gilbert. found the incidence of articular complications to have been 19 percent before the use of sulfonamides and 118 percent after the advent of chemotherapy a discrepancy which may well be accounted for by the lessened mortality with more opportunity for complications Conservative medical treatment, including splinting moist heat, elevation of the part, sulfadiazine, and penicillin, were employed Conservative treatment of articular complications in meningococcal infections his been previously recommended.

The patient did not manifest significant depression of renal function at any time Transitors albuminuma disappeared by the

fourth hospital day The CO combining power determinations were altered on the third and fourth hospital days only being 74 and 69 volumes percent (normal 50-65 volumes percent) respectively Serum chloride was within normal limits through out his illness The blood urea nitrogen on the third and twenty second hospital days was normal

SUMMARY

Recovery of a 23 year old man with fulminating meningococ cemia and meningococcic meningitis (Naterhouse Friderichsen syndrome of the encephalomyelitic type) is reported

Recovery from severe shock and circulatory collapse resulted after a period of 3 hours and 15 minutes. Massive initial doses of adrenal cortical extract intravenously and desoxycorticos terone acetate intramiscularly in addition to sulfadiazine intravenously and crystalline penicillin intramiscularly were employed. Excessive intravenous fluid and colloid theraps was avoided.

Clinical evidence of hypopotassemia was supported by electrocardiographic changes and by a low level of serum pota sum during the recovery phase. There was bood response to the oral administration of potassium acetate crange juice and food Acute arthritis of the right elbow developed on the eighth day of illness conservative treatment was followed by complete recovery. No significant blood chemical changes or renal depression was noted during the course of the illness.

A more favorable prognosis may now be given to this pre viously fatal syndrone with the early administration of adrenal cortical hormones including cortisone in addition to sulfa diazine and penicillin

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THE PRACTICAL PRACTITIONER

Time and again the critic sm is levelled at medical schools that they ar not turning out practical men By practical I fear is often meant the so t of man who can empty a waiting-room containing 60 patients no hour nd who moves with facility amongst the maze of forms and certificates which bulk largely in general practice If such is a legitum to im of undergad ate astruction then I am happy to believe scho Is are fa ling in the r task. These this are certainly important but there is something that transcends them which f the practit oner lack enders his practical skills mo e of a labil ity tha n seet and that is the capacity to think stright to know how to diagnose not in the sense of having memorized t bles of dif ferenti I diagno is but of being able p tiently to collect evidence to know what constit to good ev dence and what constitutes b d and to recognize an unusual situati n when it rises and from what source to get enlightenment In br ef I must confess to a horror of sound pract cal men as so often I have found them dogmatic empirici ts conf d at their own gnorance-ver table seled petterns of belief as proof against new knowledge s a member of the Inqu sition against heresy

-W MELVILLE ARNOTT

de stbFtWld C f nc M d l Educton Oxf d U ty P 1954 p 280-281

Agranulocytosis Complicating PAS and Streptomycin Therapy

RICHARD A MAHRER Lieutenant MC USA RAYMOND MARET Colonel MC USA

MANY DRUGS have been indicted as causes of agranulocytosis, and the list grows almost daily Most frequent offenders are

Aminopyrine and other coal Quinine tar derivatives Bismuth

Organic arsenicals DDT
Cinchophens

Gold salts Tripelennamine hydrochloride

Sulfonamides Chloramphenicol
Organic antimonials Phenylbutazone

Acetophenetidin Hydralazine hydrochloride
Dinitrophenol Procaine derivatives
Thiograph derivatives

Anticonvulsant drugs Methimazole

Barbiturates

It is believed that para aminosalicylic acid (PAS) must be added to this compendium and the potentially dangerous corr plication of agranulocytosis in present-day antituberculous ther apy must be recognized early and vigorously treated

Since PAS was introduced in 1946, its use as an antimicrobial agent in the treatment of patients with tuberculosis has become world wide Various complications or reactions as a result of its use have been reported and excellently summarized by korst. These include

Urticaria Löfflers eosinophilic

Fover pneumonitis

Anorexia Meningeal irritation with elevated cells in the cere

Emesis brospinal fluid

on dmissin rose to 63 mm/hr (40 mm/hr corrected) on the third hospital day and remai ed at the level until the ninth hospital day when it began decreasing. By the twelfth hospital day the sedimentation rate had reiched normal levels.

Reticulocyte counts were within normal linits until the twelfth hospital day when the percentage role to 24 percent. The next day t was 25 percent and thin again returned to the previous low levels. Frequent platelet counts will be within normal limit. A tourn quet test was negative.

The patient was asymptomatic on discharge on the twentieth hos pital day On d scharge her white blood cell count was 9 100 per cu. mm with 70 percent neut ophils 29 percent lymph cyte and 1 per cent monocytes One week later as th r py was being stopped the white blood cell count wa 6 800 per cu mm with 60 percent neutro phil 30 percent lymphocytes 8 percent monocyt s and 2 percent oso phils.

DISCUSSION

This patient had a severe agranulocy tools with an abrupt onset manifested by fever malaise and mildly sore throat occurring in the sixth week of PAS and streptomyein therapy. She had previously received intensive treatment with streptomyein and isomizated prior to Surgical intervention without incident Streptomyein has been reported as a cause of aplastic anemia and cannot be ruled out as the offending agent in this patient. We believe this unlikely however because she had received streptomyein proviously with no apparent ill effects. In a few cases of acute hematogenous tuberculosis reported by McDermott loukoponia of from 1 500 to 3 000 cells per cu. mm were noted during the course of streptomyein therapy. The agranulocytosis in our patient apparently occurred as a result of an allergic sensitivity of the bone marrow leukocytes to the PAS without other hematologic manifestations.

An aplastic process was considered in the differential diagnosis but was not believed tenable due to the bone marrow study which showed normal crythropolesis. In addition there was no thrombocytopenia or bleeding diathesis in this patient

Although several reports show successful desensitization to PAS after reactions to it had occurred it is believed that in the future other agents should be used in treating this woman because of the severity of her attack

Since the advent of antibiotics mottality from agranulocytosis has plummeted from an otherwise hopeless outcome in most cases to a better though still serious prognosis We were fortunate in hospitalizing our patient shortly after the onset of her symptoms Death usually occurs from overwhelming sepsis during the

suppressive phase of the granulocyte series unless the invading organism can be inhibited by prompt and adequate therapy Peni cillin in large doses was the treatment used although, until the startling response to ACTH appeared, the patient continued to regress The use of steroids in agranulocytosis is controver sial 7-10 Some authorities believe that infection is spread by their administration There is no definite proof that ACTH and cortisone adversely affect the course of pulmonary tuberculosis These factors were carefully weighed, and in view of the gravity of the situation, it was decided to assume the calculated risk of steroid therapy. The hypersensitivity state and its accompanying bone marrow changes were the immediate concern and thus ACTH intravenously followed by cortisone was administered The immediate defervescence and the quick response in leukopotests represent much more than just coincidence Dameshek" stated that the immediate shock of hypersensitivity to a drug in the bone marrow is a reduction in granulocyte precursors fol lowed by a loss of mature granulocytes thereby leaving the marrow with practically no granulocytes When marrow in our patient was examined, a later stage was seen which follows the initial insult, a e a maturation arrest where precursors were present in the marrow but mature granulocytes were con spicuously absent.

Recovery, if it occurs, is dependent upon the patient being able (1) to cope with the shock of the granulocytopenia by his own cellular reactivity and (2) to combat the bacterial invasion, which occurs inevitably in a body stripped of its granulocyte defenses "The use of steroids in our patient apparently ade quately controlled the shock of the granulocytopenia until recovery ensued

SUMMARY AND CONCLUSIONS

A patient with agranulocytosis, probably due to PAS administration, was treated with antibiotics and steroids and made an uneventful recovery No other similar reaction to this drug has been found in the available literature. It is not advocated however that steroids alone be used in the face of overwhelming in fection. They should be reserved for those patients in whom either the infection is under some control with antibiotics, or the course is unrelentingly downward due to a suspected hypersen situity behommenon.

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COOPERATION IN PUBLIC RELATIONS

Our profession is an institut on of character with a good reputatio and we se att mpting to demonstrate that the professi n operates primarily in the public interest. This has been the basi for our entit effort. We have needed and tried to secure the full cooperation of all physicians their f milies office employees and hospital personnel The acti e cooperation of the entire group is essential f we are to convince the public th t as a profession we are interested in them and n their problem that we are aware th t we are dealing with human beings who live ffer ha e problems ambitions and a pir tions yet love nd err ven as you and I As a group w must get away from and h w the public that we are away from any tendency to treat patients impersonally. The human rel tionship is m t important in all our deal ngs with p tients. When this is lost the patient loses his ind viduality and cannot secure or make the most effic ent se of the care and con d r tion needed to promote g od health a d keep our public relations

on a high plane

-VERNE S CAVINESS M. D N th Cal Md all m! p 562 N v 1954

Delayed Vasospasm of the Glans Penis Following Circumcision

Treatment With Sympathetic Block

BERNARD V WETCHLER Fist Leutenant, MC. USA
CHARLES A MOORE Major MC USA

IRCUMCISION of the adult is considered by both the professional and lav public as a minor operation. It is often performed during an office visit

The operative procedure however, is attended by its full share of complications both during and after operation. Some of these are postoperative hemorrhage infection, disruption of the suture line secondary to an exection, and, rarely excision of too much foreskin The occasional occurrence of the above together with proper measures of control and/or treatment, is well established.

The purpose of this article is to present a different complication, one which has not heretofore been observed by us nor to the best of our knowledge been reported in the literature

CASE REPORT

A 21 year-old man on 3 February 1955 underwent a circumcision for the correction of a marked phimosis

Anesthesia was carried our according to the technic of Light Wey gandt and Wetchler A 1-percent solution of procaine hydrochloride with epinephine added to make a concentration of not greater than 1 200 000 (5 drops of 1 1 000 to 30 ml of procaine) was injected into each of the following four sites at the base of the penis. Three milliliters of solution were injected dorsally on both sides of the midline to anestheuze the dorsal nerves. Two milliliters were then injected ventrally on both sides of the urethra. The patient by maintaining gentle traction on the foreskin during the paraurethral injections facilitated the procedure. An attempt was made to keep all injections external to the corpora. This method has been used in over 1 000 circumcisions or operations on the glains penis in the adult patient without the occurrence of any complications attributable to it.

The operative technic was that of the dorsal and ventral slit method. The operative and the immediate postoperative courses were uneventful

The operative and the immediate postoperative courses were uneventful

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The patient was discharged to a light d ty st tus 48 hours after opertion. At this time the operative result appeared exc llent. There was only slight edema about the fremulum the suture line w sintact, and n discoloration was present.

On 8 February (5 days after operation) the patient returned to the urologic clinic because he thought that his penis had become infected Further questioning brought out th to in the evening of 7 February while getting ready for bed, he noticed that the glinspinis was blue By morning the glanspinis was darker in color and felt cool. The patient had no pain or a yumary difficult es

Ther was marked cyano s of the glan and frenulum. The a ca directly surround ng the urethral meatus and between the meatus and the fenulum we e e pecually cyanotic. A definite and abrupt temper ture diff r nce w s pres nt between the shaft and the glans penis the glans being much cooler. The harpest line of demarcation occurred n the region of the coona. Mild edema of the frenulum w s pre ent No v d nce of thrombous, training our sufferior could be fund.

The patient was reador tied to the hospital and an immediate evaluent n by the ane thesiologist was r quested F in both the history and physical examinat n it was believed that vasospasin was the before the cyanosis and coolines the most likely cause being the trauma of ope ation. The condition was classed as a postoper tive reflex sympitic to dy tropby. Sympithetic nerve block were definitely and cated and because the sympitims were referable to a multine o gain the epidural rout for pe forming a sympithetic block was choon for the wild chieve the die including the fig. 1.

At 1300 hour 25 ml of a 0 15 p cent solut on of pontocaine (b and of tetracaine hydrochl ride) we e injected between the third and f urth lumbar interspace with the p tient in th sitting up position Ther was an immediate temperature incre e n the glans peni and within 10 minutes the tempe ature of the glans appr x mated th t of the shaft. Cy anosi decreased by bout 85 p cent

The status we maintained until the morating of 10 February when the cyan sis became more appeared. The polarial injection was repeated and following this all cyanos disappeared. There we no ubsequent recurrence of any cyanosis or coloress.

The pat ent was d charged on 14 F bruary H turned for a outine clinic heck up on 21 February and wa found to be compiletly symptomatic

SUMMARY

The initiating cause of a case of delayed postoperative (circum cision) vasospasm was assumed to be the operative procedure A diagnosis was made of a reflex sympathetic dystrophy of the glans penis subsequent to operation. The patient was treated with chem

teal sympathetic blocks via the epidural mote and had a drimitic response to this form of therapy. Early diagnosis and proper treatment may have averted a serious consequence of a minor surgical procedure.

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LITERARY BOOBY TRAPS

Latin Is there any good reason why the modern physician's writing must glitter with Latin phrases? I want measles not "morbilli "I see no reason for in situ locus minoris resistentiae" and modus operandi. And when a doctor writes pes planus for flat feet. I simply refuse to trust him. He sclearly a mannered pedant Similarly there is no justification for such terms as "pyrexia for "feveretiology for cause etc. Gallstones is English "cholelithiasis isnt And any writer who says podagra when he means gour would probably say agrypnia" instead of insomnia.

Unconventional abbreviations To you "P A may mean pernicious anemia. To the radiologist it means postero anterior. And as far as I m concerned its paralysis agitans." Which proves there is no booby trap in medical writing quite so dangerous as the loosely used abbreviation. Even the simple letter O can stand for eye pint oxygen an electrode opening or a blood group without agglutinogen.

Split second percentages I begin to suspect the authenticity of a medical paper if its author carries percentage figures beyond one decimal point. Does the fellow really expect me to believe there s a significant difference between a recovery rate of 87 1 percent and a rate of 87 13 percent? In my book, such extraordinary precision also makes the man's findings sound ridiculous.

Editorial we Finally may I be permitted a raised eyebrow in the direction of the solo practitioner who grandiloquently announces "We have had good results with when he really means I have had etc? Does he expect me to believe he s a one man Mayo Clinic?

-- HENRY A DAVIDSON M D
in Medical Econom cs
p 192 J n 1955

Hernia Due to Nonpenetrating Trauma

ROBERT M HARDAWAY L ut ma t C l el MC USA COLEMAN 1 CONNOLLY Major MC USA

ERNIAS of the lung or abdominal viscera secondary to penetrating wounds or surgical interveition occur fre quently However hernias either of the lung or abdominal viscera due to blunt nonnenetrating trauma are rare

About 200 cases of lung hernia from penetrating or surgical trauma have been reported but only 3 adequately reported cases of lung hernia secondary to nonpenetrating trauma have been found in the recent American Literature 1 Maurer and Blades in their excellent article on lung hernia reported 11 cases only 1 of which was due to blunt nonpenetrating trauma Their cases do not include spontaneous lung hernias such as herniation of the lung into the neck through Sibson's fascia or contental intercostal hernias 7

Recently two cases observed at this hospital demonstrated hernia from nonpenetrating trauma to the musculature attaching to the ribs One lesion was thoracic the other was subcostal and abdominal

CASE REPORTS

Case I A 47 year-old man was drive g a pr ce of heavy road equipment t the Engineer Prov ng Gounds Fort Belvoir Va on 17 August 1954 He ustained crush ng injury to the 1ght side of hi ch st when the machine upset in a ditch On admiss on to this hospit I he had pronounced bulge between h minth and t nth r bs on the right side whe he strained Subcutaneous emphys ma was palpable a d a defect th ough which the lung as palpated as the patient stened could be f lt in the mu cular thoracic wall No clinical or toentge logic evi dence of fractured r bs or pneumothorax was present A di gnosis of lun, her i wa evident

The p tient ribs were tap d but without success On 21 August surgical rep if w s undertaken A 4 inch incision over the ninth inter space reveal d a 1 inch tear splitting the fibers of the otherwise intact I t ssimus do muscle The muscle was cut to expose the intercostal space below The interco tal muscles w re e tirely torn completely separati g the r bs for a d sta ce of 4 inches (fig 1) Thi te r invol ed the parietal pleura s that the lu g was immediately n co tact with

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the latissimus dorsi muscle. The chest cavity was explored through this opening and the lung and the diaphragm were found to be intact. A large right angle chest drain was inserted through the ninth interspace anteriorly and brought out through a separate stab wound. Two pericostal sutures of double No. 2 cargut were inserted. The inter-

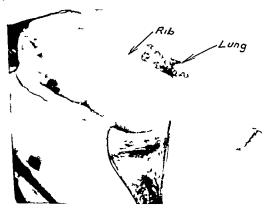


Figure 1 (case 1) The latissimus dorsi muscle has been cut r vealing the def ct between the bs with lung showing through Not the potion of b demidded of muscle Tb porton equi es a flap from the pe osteum

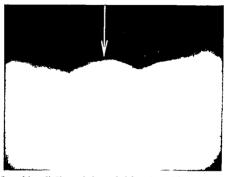
costal bundles were sutured with interrupted No 0 cotton except for a 1 inch area where there was no intercostal bundle remaining on the lower side At this point an incision was made in the periosteum on the lower side of the rib and the periosteum turned upward and sutured to the upper part of the intercostal bundle All sutures were then field using a rib approximater. The latissumus dorsi muscle was sutured with interrupted No 0 cotton. Subcutaneous tissue was closed with interrupted No 0000 cotton as was the skin. The chest drain was at tached to a water sealed bottle.

The patient's postoperative course was uneventful. The drainage tube was removed on the second postoperative day and the patient was discharged on the tenth postoperative day with his wound well healed.

Case 2 A 36 year old woman was in an automobile collision on 10 November 1953 in which she received blunt nonpenerrating trauma to her left flank An emergency splenectom, was performed at another

hospital a d on her tenth postoperative day she was transferred to

this hospital She had marked tenderness of the 1 ft flank associated with hematuria. Int avenous pyelogram showed extravasation of the dye from the left k dney nto the p rinephric t saues. Conservat ve th any w s decided on in vew of the satisf ctory 10-day course and



F gur 2 (as 2) Phot gr ph bow g the bulge app g below the tw lith g ag ast th el ti .

the lack of 1 ft flank swells g Roe tgenogt phic ex min ton showed mult ple fractures of the left thoracic cage but no pneumothorax Except for a pleural effus on n her left thorax which was tapped t ice with ev cuation of sev ral hundred mill liters of s osanguineous fluid he convalescence was uneventful Sh was discharged on 19 D cemb r with a residu I complaint of soreness and weather-aching in the left sd of hrchest

In Apr I 1954 the patient notic d that when she strained a bulge preared in the mida illary line in the subcost I area in the left fla k E am n tion showed soft crotty ion which appeared below the 1 ft twelfth rib on str n ng (f g 2) A defect n th abdominal musculatur wa palp ble n th ubco tal area just anterior to the tip of the left twelfth rib Roentgenographic examin t on showed the colon herniating through the abdominal muscul ture into the ubcutaneous spice. When the p tient co ghed the d aphragm could be palpated by f ngers in s rted into the df ct A upture f the d phragm with protrusion of the lung into the hern a could not be ruled out. Dur ng the months that

followed the patient complained that the bernia was enlarging She said that the bulging reduced her muscular strength and interfered with her coughing On 4 October the defect was surgically repaired A defect about 3 inches in diameter was found in all muscular layers of the abdominal wall where the oblique muscles had been pulled from their twelfth rib attachments On forcibly inflating the lungs the dia phragm did not appear to be damaged. The peruenal fascia and the kidney were intact. The muscle layers were freed up and sutured in one layer with interrupted No 1 cotton. The epimysium over the external oblique muscle was sutured with interrupted No 0 cotton and the skin and subcutaneous tissue with interrupted No 0000 cotton. The patient's postoperative course was uneventful and she was discharged on the fourth postoperative day.

DISCUSSION

Pneumonocele, or hernia of the lung, is a condition in which the lung bulges subcutaneously out of the pleural cavity 1-7 This lesion may be congenital or acquired, traumatic or spontaneous Congenital ones are said to be most common in the neck through a defect in Sibson s fascia Lungs of patients with asthma, how ever, also may bulge through a ruptured Sibson s fascia Pene trating trauma is the commonest cause of lung hernia Lung which protrudes through the skin from a traumatic lesion of the wall of the thorax, however, is not a hernia The lung may protrude through the diaphragm, or protrude from one pleural cavity into the other The pneumonocele rarely has a sac, which may be pleura

A pneumonocele may produce distressing symptoms. The coughing mechanism may be interfered with, and pitients may develop focal areas of atelectasis. Muscular strength may be diminished as the patient strains in liftung, the bulging may prevent the patient from fixing the glottis. If the hernia causes local pain on coughing, the patient may suppress the cough and develop atelectasis.

The mechanism of direct trauma is obvious Blunt, nonpenetrating trauma tears the finable muscles, leaving the tough, thick skin abraded, perhaps but intact in our first patient, although the bony thoracic cage was undamaged the pleura was torn, in the second the peritoneum and diaphragm were intact and multiple fractures of the ribs of the left thoracic cage were present At the time of operation in both patients, the severed muscle edges were smooth and shiny no free muscle fasciculi were seen on the edges

Repair is by simple suture of the muscle layers or if the muscle has been separated at its costal attachment as in the first patient, a flap of periosteum may be raised, turned back, and sutured

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FAMILY CARE OF THE ARTERIOSCLEROTIC PATIENT

M ny important advances ha e been made n our understanding of the arteriosclerot c Dr cess it remain neverthel s that the e is t the pres nt tm no ad quat method of p ev nting or cu ing the proce s I pers nally believe that the care of this goup of patient 30 or 40 y a s ago w peth ps superior to that of today In tho e days their m die 1 needs we e cared for by the old time gene al pract tion r who u u lly h d cared for th m throughout part of the r lives The patient alway r ided until death with hi or her child n or grand children or both usually n h s own old home. In the e days the fam we e larg and closely knit with more relatives living with na short distance The house were large and spacious and the f mily and soc al structure ce te ed arou d th se latge homes. If necessary another room and more rocking chars were added to the house accompanied by the inevit ble open firepl ce cl v pip s for the women and Picnic Twist ch wing tobacco for the old m n Th s aged p opl were desired and loved members of the family group and had the f eling of being wanted Often they engag d in petty activities within their phy a I limit which we productive such as knitting mending and other skill d hand work M ny of their symptoms and ecc nt ic ties were described as queer or peculiar r th r than psych tic

—A A MILBURN M D

W tV g M dic l J wnal

p 75 Ma 1955

Ewing's Tumor of the Zygomatic Arch

JAMES E CHIPPS Lieutenant Colonel DC USA FRANCIS J PEISEL Major MC USA NORMAN R SHIPPEY Major MC USA

ONTRAUMATIC lesions of the zygomatic arch are rarely observed Ewing s tumor is frequently reported as primary in the jaws, and occasionally reported as primary in other bones of the skull, we are not aware, however, of any report of this tumor as primary in the zygomatic arch Therefore, the following case is of interest and is reported even though the patient has been observed for only 5 months

CASE REPORT

A 9-year old boy came to the clinic because of a painless swelling overlying the left zygomatic arch. It had first been noticed by his parents a few days earlier

Two months before examination the boy had fallen at play sustaining a blow to the same area with subsequent pain swelling and slight discoloration which had largely subsided prior to the development of the present swelling. Otherwise the past history and family history were noncontributory.

Examination revealed a smooth 4 by 5 cm swelling overlying the posterior two thirds of the left zygomatic arch (fig. 1) The swelling was fixed palpably firm and slightly tender. Mandibular excursions were slightly limited vertically and to the right but the patient had no complaints relative to mandibular function.

Radiographs showed a destructive lesion of the left zygomatic arch with loss of bone detail (fig 2) A skeletal survey did not reveal any other osseous lesions

A biopsy of the lesion showed sheaths of uniform round cells with relatively large oval nuclei (fig. 3) Granular material was noted in some of the nuclei. The cytoplasm was slightly basophilic. The limiting membranes were clearly defined with minimal intercellular fibrous tissue. The tumor cells were arranged in sheaths which were perithelial in some areas and encroached on bone spicules in other areas. A diagnosis of Ewing 8 tumor was made. A differentiation from tericulum cell sarcoma, and neuroblastoma was based on the uniformity of the cell.

F m M dig Army H spit ! T c m Wash



Fg 1 Tm of the lft ygm b

pattern omb ned with the growth pittern of the heaths ind the bsence of intercellular reticulum and in the failure of clinical indirading phic examin tion to disclose any oth ripath logil lesion. This diag is was late confirm d by the Armed Foces in titute of Pathology.

Radi tion ther py was begun 3 days after the biopsy. Over a 15 d y pe iod 3 000 roentgen units in air were g wen to a 7 by 10-cm, fold directly ovolying the missing 200 kilovolts to distance of 50 cm through 0.5 mm copper and 1.0 mm alum num filers.

Ther wa am de te erythematous response to the ther py b t gression of the s z of th tume b gan alm t un ediately After 1 month th r wa clinical evidence of di e $(f \times 4)$

Five mo the after the initial examin tion the ew no clinical evadonce of recurren e t the primary site and no leal not r dogriph cevidence finewile on el white A radiogriph of the zygomatic chishowed an no ging egieration of bone the contour of a malarch



Figure .. Rad ograph shous g destructive lesson of the left zygomat c a ch



M croscop c ect on show g the t more lls (× 100)



fim [thel | t zyg m tica hon beg m g d tio the py DISCUSSION

The literature is unanimously gloomy over the results of therapy in Ewing's tumor Lichtenstein stated that he had personal knowled, e of only a single cure Geschickter and Copeland were among the more optimistic authors reporting 13 patients well after 5 years in a series of 127 However even these authors reported no survivors with lesions in the skull or jaws. Their series included 12 patients with lesions of the laws 2 of the masterd and 1 of the frontal bone

Our search of the literature at hand disclosed 37 instances of Ewing s tumor primary in the skull or jaws with but I apparent survivor Thoma cited a case from the Registry of Bone Sarcoma American College of Surgeons an instance of a 9 year old girl who was well 9 years following treatment of a jaw tumor by excis ion and radiation with radium

Geschickter and Copeland showed that radical operation might offer a better prognosis than radiation therapy alone but, in view of the crippling nature of any such procedure in our patient, radiation seemed to be the treatment of choice

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THE MODERN EXECUTIVE

It cannot be said that the executive in modern industry is free of the frustrations that contribute to emotional instability in the labor force He is subject not only to the strains of his demanding job but also to the hazards of modern competitive society and to the hazards which he brings into his office with him. These latter are probably the most sen ous of all They have to do with personality maladjustments mood disorders and unconscious motivations patterned in childhood Like the worker everywhere the executive brings to the job all his hopes his fears his worries, his disappointments his family troubles—all operat ing against the background of a changing social panorama. When the executive is emotionally disturbed there is always a major problem in the organization. This is true not only of the top men but of people along the entire supervisory echelon who are in charge of other people It is axiomatic that one badly maladiusted supervisor can cause more trouble in a plant than an epidemic of measles Strangely enough, this individual rarely recognizes his problem himself and is very much sur prised when told about it Preventive psychiatry in industry must start at the top if it is to be effective

---FRANCIS J BRACELAND M D

n Med cal Annals of the District of Columb a
p 220 Nay 1955

Split Skin Grafts in Postoperative Denudation of Anal Skin and Mucosa

WALTER J MEEKINGS J L t 1(MC) USNR

THE LOSS of anal skin and mucosa following surgical procedures about the anus is a ranty now because the Whitehead type of hemorrhoidectomy is no longer generally employed However the following two case reports are offered because of a very favorable response to a relatively simple type of surgical procedure

CASE REPORTS

Case 1 A 19-year old maine wa admitted t this hospital on 10 March 1955 for futh r treatment following a hemorrhoidectomy at an advance base The only reco d available is a narrat v summary of his hospital course

On 21 February the patient reported to ick call because of sw lling in h anal region. Tetr cain ontom in warm applic tool and mineral oil were prescribed On 23 February he ag roported to sick c ll and w referr dt an act vity with mor adequate f cilit e for treating him.

The history at the time of admiss o evealed pai ful prol p d h mormoids of sc days dut t n which h d sub ided p it ally o c n servairs therapy Positive physical findings were limited to the anal region where on the left sd th w s a painful prolapsed anal papilla with int mal and external hemorphoidal tissue press t

On 26 Febru ry hemorrho d ct my wa performed. The next written observ ti n w s on 6 M rch when an observer wrote that th p tient apper to have had a compile ceitzomf int. I hemorrhoidal excision. The p tient was thin trinsferred to this hospital because of the length of tim i wolled i healing and to receive the cire necessary to prient stricture formation.

Examin tion at this hospit I revealed the following a recent opera tive procedure on the num with circumferential loss f perianal kin about 2½ cm d tal to the d tree line with the gre t r proximal mu cosal defect 1½ cm Digital examination was po ble with the i dex finger however there were individual to 10 primal itssues Sphincter action was present but the patie thad noticed signs of an all nonintence alth j, the wa unaw reof the leakag of smool.

From U.S.N. al.H. sp. 1 N. vy 3923 FPO Sa F co Cal.L.

It was decided to apply split skin grafts to the anal canal area fol lowing dilation under anesthesia. On 12 March he was given 1½ oz of castor oil and a liquid diet was prescribed. On 14 March under spinal anesthesia dilation was performed resulting in acute fissures at 12 and 6 o clock. Free hand split skin grafts measuring 1 by 2 cm were taken from the left buttock and placed in the fissures formed by the dilation. These grafts were surured in place anteriorly and posteriorly with No. 0000 silk. Sing vaseling gauze and pressure dressings were applied.

The patient was kept at rest in bed and on a liquid diet postopera tively On 16 March it was necessary to remove the dressings because of the appearance of liquid stool. The grafted areas showed about 70 percent take at 6 o clock and about 35 percent take at 12 o clock."

He has been maintained on a regular diet and has been receiving daily instrumental dilation. At the time of discharge to duty on 18 April anal sphincter tone was excellent. He was asymptomatic and was having normal bowel movements. His anal incontinence was still present to a mild degree. This incontinence is expected to clear spontaneously. The grafts had spread out and the skin and mucosa were completely covered.

Case 2 A 25-year-old marine was admitted to this hospital on 6 March 1955 for further treatment following a Whitehead type procedure for anal vertuca actuminata performed at an advance base

One 8 February he was admitted to the advance base hospital with large friable vertuca acuminata protruding from the anus These were bleeding tender and covered the entire anal and perianal area Treat ment with 20 percent suspension of podophyllum resin was attempted but was not successful in effecting complete regression of the lessions.

On 21 February under spinal anesthesia the mucosa and vernicae were excised. The remaining mucosa was mobilized and brought out over the anal sphincter and sutured to the perianal skin. On the third postoperative day the mucosa retracted and the patient was transferred for further treatment.

Examination at this hospital revealed a Circumferential loss of anal skin and mucosa for about 2½ centimeters. The anal area was very dirty and repeated sitz baths were prescribed. There was beginning cicatrix formation and anal dilation with the index finger was all the patient could tolerate. Sphincter tone was present but he had an anal incontinence.

It was decided to attempt split skin grafts to the anal canal On 12 March he was given 1½ oz. of castor oil and a liquid diet was pre scribed On 14 March under spinal anesthesia and with the patient in a jackknife position the anal canal was dilated resulting in wide fis

sure t 6 and 12 o clock Free hand splieskin grafts from the left buttock were applied to the fissures. These grafts were it surur d but were picked in place with vaseline gauze and pressure dressings.

The p tient was maintained on a liquid diet and test in bed during the postoperative period. On 16 March it was necessary to examine the operative site because he had a large watery stool. There was a small am untof take?

On 17 March under local anesthesia of 1 percent procure a rectal tube was inserted and three quadrant split skin grafts were applied. Vaseline gauz was packed snugly around the tube and against the grafts

On 20 March dressing were removed and cattered takes were noted a ound the anal canal. The pitent was statted on a regular diet and didy dilations. The gifted areas spread out in all direct os. At the time of discharge to duty the patient's less on was haled. Sphincter to te was excellent. The were no gns of sictute. The patient was hiving rigular bow limovements and wis asymptomatic except for a slight nal incontinence which he expected to overcome spontane outsily.

LENGTH OF HISTORY IN CARCINOMA OF THE STOMACH

The concept that eally diagnosis of care n m of the stomach may mpr v nd results is not only falla ious but is in fact the rever of the truth Patients with progress ely longer periods of delay from onset of ympt m to the tim of explicit no nigorian assigns of the ness of esection and long term survial in a review of 375 cases of gastric carcinoma Swynn ton a d Truelove oted this an out tand ing finding of the present study is the marked prognosist significance of length of histo y among pitents treated with surgical resection. The greater the length of history the better the prognosis. Repeated observing for the prognosis of the eminging and x did title the need for idntifying fit is than early diagn i as the avenues through which survival aces i gastric case oma might be improved if this is possible with treese tietching.

—IAN MAC DONALD M D d PAUL KOTIN M D
S g ry Gy l gy d Ob l t
p 148 F b 1954



Clinicopathologic Conference

U S Naval Hospital Great Lakes III

POSTPARTUM SHOCK

Summary of Clinical History A 35 year old white woman, gravid I para 0, whose estimated date of confinement was 7 Noverly 1952, was seen in the outpatient clinic of this hospital for the first time on 20 October 1952 At that time she was found to h yr a blood pressure of 145/102 mm Hg, but had no edema or al buminuria A note from her attending physician stated that on 8 August 1952 her blood pressure was 130/80, and on 2 Section tember and 1 October it was 136/80 mm Hg Her total vilint gain was 30 pounds She was placed on bed rest, sedation, and a 1 000 calorie low salt diet. A urinalysis was negative for at buminuria, and showed a specific gravity of 1011 Result of microscopic examination was within normal limits. Her red blood cell count was 4 4 million per cu mm and the hemoglobin was 13 grams per 100 ml She was found to be Rh positive On thi management she began to lose weight, but failed to have a de crease of blood pressure She felt much better, so was discharged home on sedation 23 October to be followed closely in the path ologic obstetric clinic

Examination in the clinic on 3 November 1952 revealed a vertex presentation at torm, with the presenting part not ongayed Although up to this time it was believed that her polivis Lave clinical evidence of being adequate, roentgenographic polivimetry was deemed advisable and this was requested. Her blood prey was deemed advisable and this was requested. Her blood prey was on this visit was 148/98 mm. Hig and she had no albuminum or edema. On subsequent visits on 10 and 17 Novomber, she was found to have blood pressures of about 140/90 mm. Higher had no edema and the urine was free of albumin 1 inding, of roentgenographic pelvimetry were reported as adequate.

Physical Examination On 24 November, the blood pressure was 150/100 mm Hg mild ankle edemy was present Because of this rising pressure she was readmitted to this hospital for further

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rest and workup On admission the patient was found to have a term intrauterine pregnancy with vertex floating. The head would dip into the pelvis only with difficulty. The fetal heart tones were audible in the left lower quadrant of the abdomen and no audible placental souffle was heard. It appeared that the infant was quite large yet by vaginal examination the examining phys ician believed that vaginal delivery was feasible

L borgtory Findings Blood chemistry studies were done with these results Nonprotein nitrogen 25 mg blood urea nitrogen 13 mg, uric acid 18 mg and creatinine 1 1 mg all per 100 ml total protein 5 70 (albumin 3 30 globulin 2 40) grams per 100 ml Other laboratory studies were reported as follows Red blood cell count 4 million per cu mm hemoglobin 12 0 grams per 100 ml and hematocrit 37 percent The Kahn serologic test for syphilis was negative Urinalysis was negative for albumin and sugar and showed a specific gravity of 1 011 Microscopic examination revealed 1 to 2 white blood cells per high power field with no casts

Course in Hospit | Immediately on admission 500 ml of a 20 percent solution of dextrose containing 2 grams of magnesium sulfate was given intravenously Daily management consisted of 100 mg (11/2 grains) of phenobarbital intramuscularly three times a day I gram of magnesium sulfate intramuscularly four times a day and a 1 000 calorie low salt high protein diet An eve consultation revealed normal optical fundi

The day following admission her blood pressure rose to 170/100 mm Hg at which time the intravenous administration of dextrose containing magnesium sulfate vas repeated and 120 mg (2 grains) of phenobarbital sodium were given in ad dition to phenobarbital On the following two days (26 and 27 November) her blood pressure began to decrease falling to 144/90 mm Hg At that time a vaginal examination revealed the cervix partially (25 percent) effaced and 1 cm dilated Be cause the head could be made to dip into the pelvis by the Hillis maneuver it was believed that induction of labor was advisable

The patient was first given 1 000 ml of a 5 percent aqueous solution of dextrose intravenously containing 10 minims of pitocin (brand of posterior pituitary) This was begun very slowly (12 to °0 drops per minute) and was effective for the production of contractions every 5 to 7 minutes which lasted 30 seconds After an hour the speed of the intravenous drip was increased by changing the rate to 30 drops per minute. This narrowed the interval of contractions and increased their effectiveness Over a period of three hours the rate was gradually increased under close observation to 60 drops per minute which produced con tractions every 2 to 21/2 minutes. Her blood pressure remained 1,000 ml of fluid was absorbed and the needle renoved. The contractions slowed down and finally ceased It was decided to allow her to rest for the evening and begin the process of in duction by this means again in the morning

lugust 1955)

CLINICOPATHOLOGIC CONFERENCE

That evening at 2000 hours (28 November) the membranes rup tured spontaneously and she becan to note a few irregular con tractions The fotal heart tones were good and it was decided to allow her to remain under observation to see if labor would begin She fell asleep, but at 0130 hours on 29 November was availaged with uterine contractions occurring every 10 minutes, At 0700 hours she was given a soapsude enoma and transferred to the labor room. At 1000 hours pitorin was started intravannually at the rate of 10 drops per minute. Immediately very hard and regular contractions began at intervals of 5 minutes, soon describing to 3 and, finally, to 2 minutes. They were of good quality, At 1245 hours, after 50 ml of fluid had been given, the intravenou drip was stopped because it was believed that the yield per of the dextrose which was already being given intravenously This resulted in good contraction of the uterus and control of blood lace

Immediately postpartum the pulse rose to 120 per minute with blood pressure 190/80 mm Hg The patient appeared pale Blood was made available for transfusion At that time the hemoglobin was 9 5 grams per 100 ml The pulse continued to be rapid Two hours after delivery the blood pressure dropped to 80/60 mm Hg and 500 ml of whole blood was started slowly. The pulse had increased to 140 to 160 per minute The medical watch was called to see her at which time her blood pressure had risen to 139/92 mm Hg with a pulse of 190 The heart was considered to be normal and the lungs were clear It was believed that her drop in blood pressure had been due to splanchnic vasodilatation She continued to run a rapid pulse for two more hours but the blood pressure was stabilized between 100/80 and 130/90 mm lig She was pallid but seemed to be improving until 1630 hours when she stopped breathing and artificial respiration was under taken Stimulation with coramine (brand of nikethamide) was of no avail and the patient was pronounced dead at 1630 hours Oxygen was in use at the time of death but without effect

DISCUSSION

This o-called elderly p im para presented everal problems prior to her actual delivery. On her first admiss on she h d a m d rate r e in blood p essure accompaned by some edem per haps enough to be considered a very mild pre-eclamp On he second admi s on the blood pre sure had risen to 150/100 mm. Hg nd w s accompanied by an incr sed amount of edem because of this a d the first that sh was believed to be past t m it was considered ad v s ble to effect delivery Vaginal delivery w s in order a d coord ng ly the membranes were str pped and p tocan administered intravenously The m mbr nes ruptured spontan ously and when uterine contractions bec m strong th p toc n was di continued

The delivery itself could not be considered truly difficult lithough a forceps rotation of the he d was requir d to effect delivery after the p tent had bee in 1 bor for 21 hours Immedit ly following de li ery the patient s co dition seem d satisfact ry except for the rapid pul e The ta hyc rdia pers sted the p t ent appeared to be going into a state of hock and her blood pressu e began to drop Search for ev dence of external o ntern I bleed ng was done thoroughly and the trendant f lt certa the p t nt w s n t losing blood however som thing wa def n tely and se u ly wr ng bec u e her condition soon became worse

What are the causes we think of wh n w are f c d with such a situat on-a patient showing no e ing hock so n after d livery? The e causes of course an be d v ded 1 to those which accompany

the puerperal state and those which are extragenital but in which pregnancy plays the role of a possible exciting factor. In the first group are the hemorrhages seen in ruptured tubal pregnancy perforation of the uterus by hydatid mole placenta praevia abruptio placentae rupture of the uterus inpute of utero-ovarian veins and postpartum hemorrhage due to atony or inversion of the uterus. Also it is recognized that a state of shock may result in prolonged labor and difficult delivery. There is a third group associated with acute tovernia and cerebral hemorrhage and producing sudden death.

Some extragenital causes are cardiac disease where the strain of labor may rupture the heart aorta or cerebral veins and undiag nosed abscesses or tumors which may rupture during delivery Sudden death during delivery also has been seen in women with severe sicl le cell anemia Clinically our patient did not appear to be stricken by any of these conditions

In the past 10 years interest has been aroused in "obstetric shock as apart from the shock of obstetric hemorthage In 1941 Steiner and Lushbaugh! first reported amniotic fluid embolism. Since then a great deal has appeared in the literature on this subject, and quite recently Schneider! distinguished the obstetric shock seen in certain cases of abruptio placentae from that in amniotic fluid embolism. In abruptio placentae we have encountered shock believed caused by the injection into the circulating blood of a certain tissue extract (thromboplastin) which results in widespread intravascular clotting with resultant fibrin on the other hand, the emboli arise from without the circulating blood (amniotic fluid embolism on the other hand, the emboli arise from without the circulating blood (amniotic fluid or meconium) and the resultant vascular occlusions are limited to the pulmonary circulation alone.

Both these disorders may bring about a disastrous chain of events in that grave hemothage associated with acute coagulation defect may result In fibrin embolism with abruptio placentae there may occur a fibrinopenia with defibrination from massive intravascular coagulation. In amniotic fluid or meconium embolism the blood may fail to clot although its fibrinopen is not diminished. Here experimentally at least the defect appears brought on by the release of heparin into the general circulation. It is considered possible for both the conditions to result in acute circulatory failure and there may be acute core pulmonale.

Making a correct clinical diagnosis of amniotic fluid embolism is admittedly difficult. We believe it to be a distinct entity though it is hard to imagine the seemingly slight alterations in the lungs causing the respiratory distress which may and does bring on death as it occurred in this case. Our patient failed to show signs of external or internal bleeding hence we assume (correctly) that intravascular blood clotting and defibrination did not take place. There was no sud den onset of shock immediately after delivery as might be

with uterine inversion or tupture of a viscus or tumor. The place ta appeared normally implanted and cemingly separated easily and at the proper time. Its vess is appeared norm I ind untiptured. The pre-existent toxemic state did not become agg avated by the lab 1 and delivery thus ruling of teclampsia. There were no findings to point to sudden cardiac failure or to a cerebrovascular accident. The patient tolerated her ane stheric quice well ind did not vomit therefore probably did nor a pirat stomach contents. She was not known to be diabetic and never had glycosur a 'Ne had nothing to point to a venous throm booss which could give rise to a pulmonary embolism.

This set of circumstance characterized by the absence of inter all and external bleeding and other catastroph: plenom na in a patient who su c safully came through a 1 ng tedious labor but fairly trau matic delivery focuses our attent on on the diagnoss of amnious fluid embolism. What is the lethal f ctor in this entity? Is it the occlusion of pulmonary arterioles and alveolar capillaries with infact on is it a form of a phylacto d react on with ut pulmonary infaction is it intrivascular clotting and fibrinogenemia or is it some d bolic combinition of these fact is? We is cerely hope that our colleagues in pathology will before long be able to pre-int us with the co-rect newer.

In this case. I believe the clinical diagn sis to be amn of c fluid emboli in with acute circulatory and espir to y failure.

Dr Rubin's di gnoses

- 1 Amniotic fluid embolism
- 2 Acute circulatory and respiratory failure

PATHOLOGIC FINDINGS

D: Rft y The body was th t of a well developed and w ll nour shed white female 35 years of age showing ext rail e identified for freent partur ton The mammary gli nds showed ge t tional hyper trophy. The abd minal wall was fl coid in there was a sepa at on of the cities muscles. The fundu of the uterus was palpable t the level of the umb lous. There was a recently sutured epision my in cison in the left posterolat rail quadr in of the introitus. Blood clots were pre ent in the vagina. The skin and mucosae with real edition and the public was somewhat puffy. There was no periph rail ed ma. The puplic we equal and is midpo too. There were no palpable lymph nodes. The body was 60 inches in length and weighed an estim ted 130 pounds. Examinate of the lover abdomen revealed an enlarge dip to thattum ut us. This was no excessive fluid of blood present in the pertone? I avity. The uterine veins were large very it rituous and thrombo ed. Thrombo is extended into both broad ligaments and along the ovirian veins to the left renal vein and to the inferior vena cave. The lung were will expanded Pulmonary.

L Comd Alla R f ry (MC) USN Ch f f Lab ra ry Serv

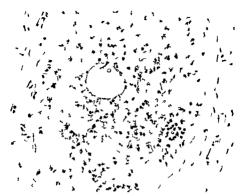
arteries contained postmottem clot On cut section the lungs were not remarkable. There were no other significant gross findings



F gure 1 F br embolus occl ding a pulmona y cap llary (× 440)

Microscopic examination of the uterine and ovatian veins show an extensive ante mortem thrombosis In the material in the central portion of the clot were questionable squamous and desquamated endothelial cells Microscopic sections of lung showed multiple small fibrin clots occluding many of the pulmonary arterioles and the alveolar capil laries (figs 1 and 2) Far stains showed accompanying, small amounts of far associated with these thrombi Sections of the liver showed a moderate fatty vacuolization of hepatic cells The periportal spaces were excessively cellular containing lumphocytes a few polymor phonuclear leukocytes and cosinophils. No necrosis was present Sections of kidneys owaries and uterus showed a rather extensive decidual reaction of connective tissue.

In summary pathologic examination would indicate that death was due to a widespread occlusion of pulmonary vascular bed by fibrin and fatemboli



I g re 2 F br dbl dcell adftocld blm nav 1 ! (× 20)

Thombo in the pulmon ry vascul r bed is best expl ned on th basis of expession of amnotic fluid contai ing thromboplastin into nous system The clinical history 1 consistent with reported c ses of mn t c flu d embol sm Wh le there w s moderate f tty de generation of the liver other a atomic changes of t xem were not noted The e w s no ev dence of an cut coagulation deficiency though th s may possibly have existed Blood stude to rule this out were not d ne before death n r was the blood ex m ned mmediately after death to cert in the possibility of this occurrenc

P thoi a c diagnos

Thrombosis of pulmonary vessels by fibrin and fat embol: (amniotic fluid embolism)

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Ob t & Gyne N Y 4 273-294 Sep 1954

PROMOTIONS OF OFFICERS

The following officers of the military medical services on active duty in the Army, Navy, and Air Force have recently received temporary promotions to the rank indicated

Medical Corps

L wre ce J Adams Capt USAF Geog M. Aki Jr LL USN Richard L. Allen, Lt. USN Robert G All Lt USN Richard T Arn st, Jr , Lt. USN Jo O Ar ingto Capi USAF Ba il C. Arthur L.L. USN Arthur H Auerbach, Lt USN Jame K Ave t Jr LL USN Donald E. B br Lt USN Norma W Bad y Lt USN H ward Bal n, Lt USN Georg C. B rr tr Capt USAF Georg W B Lt USN Fred 1ck D Beckwith Lt. USN Delf J Blitt n Capt. USAF Rob t Bernhad J Lt USN Vincent J B 1 Lt USN Fank S. Bl ton J Lt USN Da d Blau Lt USN L ster J Bola ch, Lt USN Robert F Boudreau Lt. USN Reg nald S Bowen Lt USN
Rob rt L Br tma Lt USN
Edgar G B unstein Lt. USN Thoma V Br na Lt USN] m s] B od Lt USA Bry n G Brogd n, Capt USAF Dml] Bo Capt USAF Cha 1 P Bugg Lt USN Richa d L Butler Capt. USAF William M. Byrd Lt. USN Gr ham V Byrum Lt USN G rald W Cady Lt USN Donald L Cart Lt USN
William C Cha Jr Lt USN
Saf d Chod h Capt USAF kill Chritia Li USN BnL Crif Li USN Ge 8 O G P Jr Lt USN
Joh S Dard Lt USN
Fr is T D y Lt USN
Robert A. Deach, Lt USN DailP Del v Lt USN DI BDled Lt. USN DmIR Dme Lt USN H best W Dickerman, Lt USN

G rald F Dobel Lt USN Robe M Donaldso Jr Lt USN M hal B Dool y Lt USN Donald R Dunning Capt. USAF Sear E Edwa ds Lt. USN Gog E Ehrlich, Lt USN F dS. El sh, Lt. USN Fred ck M Eva s Lt USN Chanigh Ewg, Lt USN
Jams B T Fot Lt USN
F c A. F t Lt USN
Rober R Fowl r Lt USN
Godon R. Freeman Lt USN Pul D Fuchs Lt USN
Jo ph T Gall gher Capt USAF
William F Gebhatt Lt USN R bert P G ty Lt USN
B J Gil Lt USN
M y A Goldst Lt USN
W ya V G b g Lt USN J seph Gr nsb g Lt USN Edw dS Gr nw ld Capt USAF Edwin D G iff n, Lt USN D mill G ss Capt USAF Carr 11 S Hamilto Lt USN Charl s H. Hart, Capt. USAF k mel J H Lz USA O c r G H n Lz USA Harry H. H w J Lz, USA V nce L Hutchi Lz USA William Hym Lt USN Dom c A. I troc so Capt. USAE J m A. J cob J Lt USN
H rwin B J miso Lt USN
G atd W J with Lt USN J hn R. Joe Lt. USN Mark S J 1 Lt USN J hn S Jo y Lt USN J hn R K e Lt USN Strant L Keill Lt USN Thomas J Kell y Jr Lt USN Phil p A Kharallah Lt. USN Raymo d N F K II n, Lt USN J mes M Kilg e Jr Li USN Steve T to II Li USV Dougla R koth Lt USN Thom L K way LL USA

Medical Corps-Continued

Medical Corps—Continued

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Dental Corps

Dental Corps-Continued

Sun R. Cloud Lt. Comde USN
Stewart T Eldr Lt Comde USN
Ivnag Frank 1 Lt. Cornde USN
J hn R. H mmond Lt. Comde USN
William R. Hurchius n, Lt. Col USAF
Charl s E. Kailer Lt Cornde USN
Donald S. Kran Lt Cornde USN
Earl L Lampshire Lt Cornde USN
Emory J Lusk Lt Gol USAF
J hn H Ma hl dj r Lt Cornde USN
Edward R. Ma un, Copt. USAF
Bernard E. McDermott Copt. USAF
Bernard E. McDermott Copt. USAF

Witer J Michal k LL Col USAF
Jam A. Mitch II LL Comdt. USN
Wyn A. Nelson, Lt Comdt. USN
Thomas J P P LL Comd. USN
Thomas J P P LL Comd. USN
H my J Phile Ji Capt. USAF
H my H Sc f ld J LL Comat. USN
Delman Smith, LL Comdt. USN
Delman Smith, LL Comdt. USN
John R. Steppard. LL Comdt. USN
Alonza D Steel J Capt. USAF
Da idl T uman Lt Comdt. USN
Entique V l at Jr. LL Comdt. USN
Gwy A Woods, Jr. LL Comdt. USN

Veterinary Corps

V ctor H. Betry Capt. USAF
V 11 C. Bishop Maj USA
Do ald L. Dea Col USA
J cph B Doak Capt USAF
Alph us H Seel y Col. USA
Arthur R Sk w Capt USAF

Wit Smt Col USA
William B Scodgrass Col USAF
John L. Terry Copt USAF
Harold D V I stine & USAF
Will m J Wich Copt USAF
Domald H W g Ist Lt USAF

Medical Service Corps

I my L And o Ist Lt. USAF Gerald J Armati Capt. USAF Herbert C. B a a May USA Chais E. Bil May USA Rus II C. Cheek, Lt Col. USAF Manuel S. Cr ch Ist Lt USAF Ge W Cr well Lt Col. USAF Eal Danka May USAF L we ce C D is J 1st Lt USAF L si D v s Capt USAF Joh V DeLuc May USA H nry R. D ck May USA Charles C. Dill Lt Col USAF Ge g L Fi 1st Lt USAF R bert W Gehr & Ist Lt USAF N il J Gitt Iman 1st Lt. USAF John R G en Capt. USAF Joe E. Hunt, Jr 1st Lt USAF Eug J Kamr Ist Lt USAF Raym d L K t Maj USAF Go do S Kjol ud Col. USAF R be t E Linder Capt. USAF

I me I Long May USA William J M d May USA Edwa d S. Nugent, Capt USAF John H P w ck, Jr Man USAF J m s D P er 1st Lt USAF Jam W P lkinghorn Col USAF Thomas E. Pow is Ist Lt USAF William C. Rei hm n, Capt USAF

J D R ger Capt. USAF Edward M Set ght, Ist Lt USAF Ol ad J Simp o 1st Lt. USAF J ha W Smiddy 1st Lt. USAF Benjamin R Snyd J Capt. USAF] m T St ele Ist Lt USAF H mry O W ck, Jr 1st Lt. USAF R II D. Willard Capt USAF Elwo d M. Wight Col. USA William J Wyatt Lt. Col. USA Vugil T Yat Lt. Col USA I cah M. Zimm iman 1st Lt. USAF Geog Zi emann Lt. Col IISAF Harry Z bk ff Col. USAF

Women's Medical Specialist Corps

Mary N D mp t 1 tLt USAF El : L D mi s Capt, USAF Martha J F ttwe 1st Lt. USAF Fil mena R. Fus Capt, USAF Ba bar D, Gr y 1st Lt USAF L lua M. H dri k May USA k tha : Leonard May USA Mary Lip c ub May USA J phin C. Lydon May USA
Juliu R. Maynihan Gopt. USAF
Il len Murph Ist Lt USAF
Kathleen D Murphy Ist Lt USAF
Dotts L. N riheum Copt. USAF
disgr: E Pont et Ist Lt USAF
Oliv J P tter Copt. USAF
Ev lyn G Summ es May USA

The following officers have recently received permanent promo tions to the rank indicated

Medical Corps

Curt PArtz Maq USA Jm NB n, J Maq USA AglA Cad na Col. USA] hn E. Edw d Mag USA N al B H dley Capt USAF CI BH w n Mag USA RbnC.K b] Capt USAF Bur L L ing tone Capt USA George H. M. L. n. J. Capt. USAF

Byro L Mull May USA I ha B N rt n. Capt USAF Charl R. W Reed May USA L wis C. Shill b g Col USA H I E. S edd Capt USAF R b & G. Thomp n, Lt. Col. USA T JIW n, J M 1 USA Chal W Upp Capt USAF Will m E W II Capt. USAF

Bental Corps

SdyAHR CADI USAF Cha I J Maha Copt. USAF Ed a d R. Rasku Copt USAF Raym d W Shaddy Copt, USA M b E. Shumak May USA Wy W The rabe ry May USAF

DEATHS

BAUER M by L Fir L et mat ANC USAR F t Smith Ark 4002 A my Serv U t A my H p tal C mp Ch ff A k grad ed a 1951 f m th Fra kford H p tal S hool f Nw g p hid d phan P pp t d d l et 2 | ly 1953 de d t d ty 8 O t b 1953 d d 6 | 1955 g 25 t V Van, O tl f jer v d tom bl d t.

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ROBEPTS Rhd Edwd Fir I t MC USAR Jh town P OBEPTS R h d below of Fir I the Usak jii weed a greed Carge H I pre C mp y 3461 S re U t Camp R k Al pp t d od l ut 28 July 1950 ocd d d ty 26 A g 1950 d d 20 M y 1955 g 32 th U S Army H p I C mp Ruck Al f June d craft d

NEW CHAIRMAN OF A M A MILITARY MEDICINE SECTION



Outgoing charman Maj Gem. I S Ravdin MC USAR (left) congratulates b s successor Rear Adm H Lamont Pugh (MC) USN (r ght) following elect on of officers of the MI tary Med cine Sect on of the A M. A

At the recent American Medical Association meeting in Atlantic City
N J Rear Admiral H Lamont Pugh (MC) USN former Surgeon General
of the Navy was elected chairman of the Military Medicine Section.
Captain Cecil Andrews (MC) USN Director Professional Division
Bureau of Medicine and Surgery was elected secretary The outgoing
officers were Major General I S Ravdin MC USAR chairman and
Colonel Charles L Leedham MC USA secretary



The numerous illust ations are s tisfactory. A concise summary sure to b popular with students is provided at the end of each ching Although no references are given there s will chosen list of Selected Reading preciding the index

This volum is well o ganized clearly written and certain to achieve a firm postion in the fmly ft xtb oks o comparative anatomy -BENNETT F AVERY COST INCLUSE

THE ABNORMAL PNEUMOENCEPHALOGRAM by L M. D d // M D th 696 ll 291 f gur L & F b g Phild lph P w th 696 II 1955 P \$15

The second edition of this excellent work is identical for the most part with the first edition publish d in 1950 however significant dif ferences which make it better b k re impo tant additions to the chapters o t mr of the potr can lf s chonic subdu al hemat ma nd c br l atrophy The b bliggt phy has be n larged and errors nith it would the fit that on hive being rich d

The text includ a di cu s on of all les ns d d ses capable of produc g gn f cant changes n the pneum e cephalogram P rt I co em ng tumors of the brain i cludes a hort but exc ll nt chapt on the pathology f b tum rs T e neopl ms a e d scussed in the first s ton The second section deals with no ne pl t tumo and includes chapt dev ted to th d cuss on of chro ic subdu l hem t m br in absc s syth l f th b in vascula an m lies intracrani l urysms nd cerebr I h mo h g nd th ombosis Part II consisting f 11 ch pters is entitl d N ntumorous L sions of the B in The text upported and mpl f d by many detailed ca e historie and numerous ill tat n of excelle to 1 ty

The volume t g ther with an ealer volume The Normal E ph alog am by Cornelius G Dyke nd Leo M D v doff should be con sidered must reading by tudents in radiology neurology o urgery The Abnormal Pneumoe c phalog am is an auth t itat ve reference book for the mor xperienced p act tioner of d ology tol gy n u o gety and path logy

-ELNER A LODMELL Col MC USA

DISEASES TRANSMITTED FROM ANIMALS TO MAN by Thom G Hull Ph D 4th data 717 pg 11 tr d Ch l C'Th m Publ h Sp gf ld III 1955 P \$12 50

This revi in f well known tixt his bein xpanded 25 percent ov r th pre iou editi n (1947) and th number of contributors i creas d fr m 15 to 26. The book s concis ly w tten in an easily read ble format; the profus bl ck and white illust mons trible and fig ures are generally clear and with the eption of the microphotogr phs helpful in int reretat n of the text Ref r nc d ta at th end of many change s are volum nous and u eful

The work is especially suitable as a basic text for medical and veterinary students and as a comprehensive reference manual for the practicing public health worker physician and veterinarian. It is also of value to the military preventive medicine officer because it contains data on a number of evotic diseases rarely described so succinctly in one volume. A relative emphasis on certain anin al diseases (vibriosis Newcastle's disease glanders) which are occasionally found in humans in frequent contact with animals indicates that the book is written primarily for the veterinarian.

The weakest portions of the work are those which might well be of the most general interest i e the section on the relation of human and animal diseases and chapter 22 "Infections Produced by Animal Parasites In these a number of important diseases such as hydatid disease African trypanosomiasis and the trematode diseases transmitted by animals are only briefly mentioned. One wishes the authors had discussed in more detail the ecology and epidemiology of all the diseases described because the book is eminently suitable for such discussion. Therapeutic measures against well known diseases have been wisely minimized or omitted such information being readily available from other standard texts. Excellent summary tables which classify diseases transmissible to man from animals are included at the end of the book.—PHILIP R. BECKIORD, Li. Col. MC USA.

WORLD ATLAS OF EPIDEMIC DISEASES First of four issue of Part II edit d by Profe o Dr med Enst Rod muelds under the Sponsorship of the Heidelberger Akademie Der Wissenschaften 168 pag 10 colored map Falk Verlag Hambu g Germany 1954 Price 40 Deutsche ma k plu extra cha ge for postuge and packing

Geographic studies concerning the epidemiology of world diseases are accumulating regularly and with commendable speed. The second part of this original atlas contains both a continuation of the studies of certain previously reported diseases geographically, and new climical entities. The extension of dysentery sleeping sickness and trachoma studies to the African continent relapsing fever with particular reference to the 1920 epidemic in Russia and the distribution of smallpox in Europe up to 1948 make new and fascinating reading More recent data on animal and human rabies in central Furope include cases through 1953. Coxsackie virus infection in Europe including Scandinavia has been added to the earlier observations. A new venture into the North and South American continents the first studies in these areas concerns the vectors and the human incidence of Chagas disease.

The descriptions of the diseases in both German and English are well written and clearly expressed. The excellent maps are of the same caliber as those in the first part Also included is a new population density map of the United States. All the descriptive sections and the maps are arranged so that they are inserted into the original loose leaf binder —GOTTLIEB L. ORTH Col. MC, USA.

LIVER INJURY d ted by F W H ffba M D 231 page llustrated Sp d by th J 1sh May J F d ton N w Y k N Y P 1 14 25

The progr m of this conference report precludes the isolation of the several branches of science from one another and thereby encourages the exchange of methods research plans concepts and difficulties. We thout formal speech making the full participation is conducive to communication indictor setrilization of ideas. Informality and tempo has been preserved in the published transactions in order to share with investigator and students an insight into see tific minds exhibiting mutual interest respect trues and co-on ration.

Gue t participants (Lundsg and Gurin Kost litz) introduce three semin rs on the liver and carbohydrate f t and protein met bolism respectively. The experiences g ined in their I boratorie timulate c itical discussion in dinformal group inte change. The fourth seminar on cardiova cular le ions in choli e deficient rats rel tes the experiment of Hartroft and Wilg am which stemm d f m studies on the liver in choline deficiency. The 20 part c pants represent all the significant brinches of science rel ted to the problem of liver injury. E ch has achieved the ungul I fied status of an authority in the field of medicine or clos ly related discipline.

Although the format of objects est nethod in sulfined summay is lacking eight paper includes a bibliog phy and is illustrated with griphs charts and micophotog ph. The index is cumulative from 1949 until the welfith and final a null cinference on 1 rinjury. Thus this volume completes a sirie which may serve as a reference and stripping.

The average clinici n will find the volum und tandable but should not expect to re chire dy conclusions and umm rizations

-JACK C SHRADER Lt. C I USAF (MC)

THE YEAR BOOK OF THE EYE EAR NOSE AND THROAT (1954-1955 Y r
B kS) dt dby D m kV l, M D and J b R l, d ay M D
461 pg Il t t d Th Y B k Publ h I Ch g Ill
1955 P 16.

The Year Bo k of 1954-1955 cont in abstr cts of rucles publish d during 1954. It is divided into the elections Ophthalmology 243 pages otohinolaryngology 97 p ges and rhool ryng logy 101 pages. The abstract car fully chos n by outstanding specialists in the fl d ar for th most part practical and interesting the special st. The edito alcomment on many of the controve latricles add much to the value of the book. The subject ndx is especially complete fo such a large v lum of articles.

This Ye r Book is not be ecommended as a helpful aid in reviewing the contantly increasing number of articles in the fillds of ophthal $molo_{o}$ y and torbit olary gology—SHIRLEY A FUHRING Copt, (MC) USN

LABORATORY MANUAL OF BIOCHEMISTRY by Benjamin Harrou I west

Bock, Abraham Ma w Gilbert C. H. Stone and Harry Wagreter 4th
edition 164 pages illustrated w B Saunders Co Philadelphia Pa
1955 Price \$3

The latest revision of this manual provides a choice and range of learning experiences which are consistent with the needs of the premedical and medical student. On this score one is impressed with the
frequent but judicious dependence upon the better known clinical laboratory procedures. It would appear too that this laboratory ranual could
be effectively employed in conjunction with any of the standard biochemistry texts.

About one third of the book (31 pages) is devoted to blood chemistry this chapter being a compendium of tested procedures widely employed in clinical chemistry. One would be hard pressed to find o to construct a wore efficient compilation of such procedures. The chapter on colorimetry includes a functional treatment of the Duboscq colorimeter filte photometers and spectrophotometers. The chapters devoted to calbo hydrates lipids and proteins include the standald tests, plus an introduction to the technics of polarimetry and chromatography. The chapter on enzymes includes an exercise in tissue respiration measurements. Each of these special procedures is preceded by a brief explanation of the principles concerned.

Directions for the preparation of qualitative reagents are placed in the appendix. This arrangement promotes the a same of a strict ply unhampered statement of the separate procedures. Figures a - la g-ly confined to diagrammatic representations of equipment which might be expected to be unfamiliar to the college senior e.g. Var Slyke name the apparatus. Wabu grequiment and micro-Fjeldahl assembly. The student will approciate the use of sanity netal ings in place of the more conventional bindings which allows the opened book to le fa on the laboratory table. This binding also perms is the alternate expanse of single pages.—Thaddels I DOM INTILL Col. LSAF(M.C)

THE STORY OF DEVISTRY by M. D K Browner D D S Rev and idded 462 pages Dental Items of Inte at Fublishing Co. Inc.
Brooklyn S Y., 1554

This volume is a compila ion of manifeld about dertility and allied fields first published in 1939. According to the author, the volume war to the market place. The success of his e art is arrected for publication of a third and enlarged ed. ion.

Presented in a highly readable and entertaining the error manages nevertheless to convey considerable factors and the error source book in the stiller sense of the With its dean requirement as sustained nationary of the pogram of horses and the stiller sense of the pogram of the po

Topics discu sed range from the purely professional aspects of dentistry to the more mundane considerations of financial factors and speci lized training facilities. There is reading of interest to a wide audience. This reviewer was particularly interested in such topics as those which analyzed and discuss of the effect of the inventions of vulcinite and the dental engine for information of this type is not often brought o attractively to the ly reader Members of the profession familiar with such knowledge will find greater value perhaps in uch topics a the account of Taggart us the Dentists. Alliance and defeat of the Taggart parters. Moreover, the dentist confronted with the need to make speeches before public gathering will find this volume a ha div reference to provide illustry eve material.

PSYCHOSURGERY AND THE SELF by M ry Fra R b nson Ph D d
Walt F m n, M D Ph D 118 pag s G & Stratt I N w
Y k N Y 1954 P \$3

Except for one chapter written by Dr. Freeman which is a somewhat techin cal and descriptive review of dev lopment in in psychosurgery this work spimarily concerned with the psychol gic appraisal of the postlobotomy person lity. Chapters are devoted to n examinat on of previous psychologic studies glimpses of the postlobotomy person alities constituting of generalizations developed from the senior author s observations and followed by a hypothesis of self-continuity which attempts to expl in the nature of the alterations in the self-concept produced by psychosurgery. Others are devoted to the appraisal of this hypothesis by the introduction of the "Robinson-Freeman Tests of Self Conti uity which the uthors cault in were developed for research purpoles only. These tests are individually called. The Self Regarding Span Test of the Sens bility Questionnaire. Both are presented in the appendix together with the method for administration.

The study around which the book is written consi t of 51 prefrontal lobotomy patients who served as the experimental group and who were matched with 17 n plobotom z d patients in regard to age di gnosis and length of illness The l tt r had improved without psychosurgery Test differences between the gr ups were found to be highly sign ficant n the expected direction Two subject with intractable p in were also given the test p e- and post oper tively with results th t seemed to support the hypothesis. An evaluation of this expriment a difficult because of a number of factors among which are the smill number of controls the unconvent onal manner f their select on the lack of cross validation data and the fact that patient considered unimtroved were excluded fr m the study It seems to this reviewer that what is offered in this book could bett i have appeared in condensed form in one of the profes ional journals. As an article it would have been excellent-a book t seem to leave too m ny quest ons unanswered

The authors are to be commended on their clear and effective use of language for providing a model for interdisciplinary research for calling attention to the rich potential in psychologic research offered by psychosurgery and for their excellent bibliography consisting of 170 entries—THEODORE C. KAEN May, USAF (MSC)

THE STUDY OF THE BRAIN by Hyman S Rubinstein M D Ph D 209 pages illustrated Grune & Stratton Inc New York N Y 1953 Price \$9 50

In a straightforward manner and by a popular functional approach the author succeeds in presenting a brief well organized account of the anatomy of the brain and spinal cord. This should help not only the medical student but a so those who wish to specialize in neurology and psychiatry. The text is designed as a companion to the author's stereo scopic atlas. The inclusion of significant plates from this atlas as well as drawings of transverse sections of the spinal cord and brain stem in this book however makes it complete in itself. The drawings are exceptionally well labeled.

There are 18 chapters the first few devoted to dissection and general survey of the brain a welcome and well timed emphasis. The remaining chapters for the most part describe the various functional systems. The author's concise style of presentation is illustrated in the last three chapters which are related to the cerebellar system extrapyramidal system and the hypothalamus. The index is adequate and the bibliography comprehensive.

This book should be of particular value to those who are interested in gaining a fairly detailed and well synthesized concept of neuroanat omy. It also readily lends itself to a fast review of the subject

-ARTHUR J LEVENS LI Col MC USA

CIBA FOUNDATION SYMPOSIUM ON HYPERTENSION HUMORAL AND NEUROGENIC FACTORS educed by G E W Wolstenholme M B B Ch and Margar P Cameron M A 294 pages 73 illustrations Little Brown and Co Boston Mass 1954 Price \$6.75

This book is an excellent reminder of our ignorance concerning the clinical entity of essential hypertension. It raises many old questions such as how can hypertension be defined and how does hypertension experimentally produced in animals relate to the human disease. The symposium does not provide the complete answers. Many new problems are discussed. These include the persistence of hypertension even after removal of pheochromocytoma and the return of the epinephrine and norepinephrine excretion to normal and the question as to whether high blood pressure is an essential part of the hypertensive disease process.

The book is a must for anyone engaged in hypertension research. It also belongs in all medical school libraries. The book is not for the medical school student and general practitioner and is of little value to the busy internist who is not keenly interested in this important tesearch field.—MATRICE C DAI INSOV Col. MC USA

SURGICAL TECHNIGRAMS by F M Al Akl, M D 341 pg s ill trtd M G w-H ll B k Co I c N w Y k N Y 1054 P \$12

This book contains a ser es of excellent drawings dep cting the surgical anatomy and technic of over 30 commonly performed oper tions with a set of concise explanatory note of each step illustrated and more complete notes at the end of e ch procedure. The medical student, intern beging surgical r sident in digeneral practitioner will find this book a valuable reference and quick review of the surgical anatomy and technic of the operations illustrated. The more advanced surgion will find the illustrate ons interesting and admirable in their simplicity and completeness but will not be intrigued by the complexity of the problems illustrated.

The operations listed are standard and proper with some exceptions the first method shown for repairing femoral hemias is somewh t out moded because most surgeons now use the supra inguin I approach and Cooper ligament repar The appendectomy illustrated is more elaborate than necessary simple light on and amputation of the appendix with caute zation and without inversion or burial of the stump ha proved to be sufficient. In the uterine suspension illu trated suture of the uterosacral ligaments behind the cervix believed to be n important part of this operation has been neglected Supracervic I hysterectomy should be mentioned only to be condemn d in the average patient If hysterectomy is to be undertaken a complete hysterect my sh uld be d ne to avoid carcinoma in the cervical stump Varicocelectomy is n operat n of rare and doubtful value because most varicoceles w ll subside with conser ative treatment or t lea t a higher amputation above the inguinal ring s a better oper tion Finally mere high I gatio of the saphenous veins for varicosities without concomitant stripping of the saphenous systems s nsuff c ent .- CLINTON S I YTER C L MC USA

HYPEROSTOSIS CRANII by Sb rwood Moor M D 226 pg 11 ra d Ch i C Thom P bl h Spr 2f 1d 111 1955 P \$10 50

This book s n extensive monog ph n hyper stosis of the skull According to the m rphology of the thickened bone and the areas of the skull involv d the author classifies them into four types The best known of these types is hyperostos fr ntal s interna

The subject is approached from the rad og phic aspect cases being collect d by r view of film of over 10 000 patients. Measurements of the size and thickness of the skulls we e made from the film and simil r meas rements were made on a number of dried museum specimens at drad graph of these specimens. The dt is odenvid are given in tabul r and graph c form. Attempt is mide to establish norms for skull measurement.

A large part of the b ok de oted to clinical aspects of hyperostosis crani: The hospit 1 ecords f over 500 pare is with this condition and for control charts of 1 reer numb of prets without hyper

ostosis cranii were reviewed and tabulation and analysis of general and neuropsychiatric findings were made. The results are presented in tables and graphs. Etiology pathology and morphogenesis are discussed at length. Possible relationship of the condition to various endocrine disorders is discussed in particular detail.

The book is divided into 20 chapters plus two appendixes and seven preliminary sections. There is considerable overlap in the content of these subdivisions. There are a number of typographical errors and grammatically incomplete sentences some of then seriously distracting from the sense of the statements in which they occur. Cross references are given by chapter only necessitating a search for the reference. Some of the author's conclusions contradict previous statements. Peproductions of radiographs are good to excellent. The numerical data particularly that derived from the clinical charts is somewhat difficult to correlate and digest due to the manner of presentation. In spite of these defects the book presents a great deal of factual material and there are many interesting speculations and theories in regard to hyper ostosis cranii. It will serve as a source of information for those interested in hyperostosis of the skull

-LONGSTREET C. HAMILTON LE COL MC, USA

THE ANATOMY OF THE BRONCHIAL TREE by R C B ock M S 2d edition 243 pages illustrated. Oxford University Press New York N Y 1954 Price \$11

A monograph on the details of segmental anatomy of the lung could come from no more qualified observer than Mr. Brock and publication of such a book at this time is in keeping with the increased interest that has been accorded thoracic surgery since the late war. The material comprising this book is derived primarily from the extensive study and clinical experience of the author at Guy s and Brompton hospitals in London and it therefore assumes a practical value not true of the older anatomic concepts of the lung. Here is anatomy for every-day use designed to improve diagnostic acumen and therapeutic accuracy in treating patients with pulmonary lesions.

The introductory chapter is devoted to the international nomenclature applicable to the bronchopulmonary segments. Adequate space is devoted to discussion of the role of bronchial embolism and posture in particular relation to lung abscess this is basic information and is applicable to lesions other than abscess. Pertinent discussion is given to the levels of the lung fissures as recognizable in the living and the value of accurate information in planning surgical approaches. Specific chapters are devoted to each lobe of both lungs as well as to the entire lung and its variants. These chapters are well illustrated with conveniently placed pictures of metal casts of the bronchial tree correlated with color plates of injected lung specimens and clear radio graphic reproductions. A final chapter devoted to the preparation of specimens should be of value for those interested in preparing teaching material.

The format of this second edition is a marked improvement over the first edition published in January 1946. The chapter devoted to the m ddle lobe has been expanded to more completely present the middle lobe syndrome The bibliography credits sign ficant contributions to the study of bronchopulmonary natomy since 1880 This monograph should be available to all physicians concerned with the d agnostic or therapeutic aspects of pulmonary disease

-THOMAS H HEWLETT LL C L MC USA

CORRELATIVE NEUROSURGERY by Edg A k bn, M D R bert C B

tt M D R b rd C S bned M D and El b tb Ca l Cro
by Ph D 413 p g llustrat d Chal C Th m P bl h Spr af ld III 1955 P

In add t on to the a ther of this book there are 11 contibutors all of who e names are familia to neurolog sts and neurosurge s It ha been the aim of the authors to c rrelat neurosurgical t chn cs with the ever expending knowledge of the neurognatomist neurophysiologist nd bi physicists. It could hardly be expected that a correlation of such w dely plead information could be completely attained this o e book which is so practic ! nd straight fo ward nevertheles the autho h ve m de an e cellent ten that di cti The importanc of g od plain roentgenographic tudie of the skull of skillfully per to med electr nceph logr phy and of dir ct uncomplicated anatomic ppro ches to th urg c l problems are all emphas zed n th s book

This is a beautif lly illustrated volume with som of the best h lf to and I ne draw ngs that are to b f und in any curr nt neurosurg cal work and the autho printers a d p bl sher are 11 to be compli mented in the fine physical quality of this volume. It is a u eful ind gractic I book for the you g neurosurge n and a certainly t be recom m nded s a ready refere ce on any neur surgical service where there res de ts i training - IOHN MARTIN C I MC USA

PA D 750 pg II d P bl h d by M d 1 L br ty A

1955 P \$5 Se d c A h C THE DEVELOPMENT OF MEDICAL BIBLIOGRAPHY by E ! Il Brodm n, ltv fSt fM rvl d B ltum 1 Md

All whose work in any way brigs thin into cint at with medical It ratu and bibliogr phy one a debt of grat tude to Mis Brodman the Assistant L br an fo Pefer nce Serv ces at the Armed Forces M d cal L b ary I sho t but pl as ntly w tten highly docume ted essay the growth and devel prent of printed lists of edical bo ks and journal will p nt d Th fi ld is e v red from Champier (in 15061) to the present difficult stu ton with the scittered bulk of medic l lit rature Som 250 g ral bibliog aphie are li ted a d th th more important on s d scr b d The most pertin nt sectio -The Pr ent S tuation - dru bly cove a comple it at n

The bok is well llustrated and index d and will prov and helpful to many segment of the cientif c popul tio

THE CLINICAL PHYSIOLOGY OF THE LUNGS by Cecil k. Dnnker M D
D Sc 85 pages illustrated Charles C Thomas Publ sher Springfeld
III 1954 Price \$5 50

This easily read brief monograph is the outgrowth of many years of research by the author. The material was first given as a series of lectures and then assembled and amplified into its present form. The reader is taken naturally through a consideration of the aiteness the veins and capillaries the bronchi and bronchioles the nerves and the lymphatics of the lungs although discussion of gas exchange per se is omitted. The reader thus gains a clear concept of the anatomic physical processes in the lung. The easy prose and the constant repetition with the integration and reintegration of each new idea presented marks this as a fine teaching text. One regrets its brevity and that the author did not finish the pattern of lung phy fology by adding the material on gas exchange he knows so well.

The illustrations are well done as is the printing and binding. It is regrettable that this modest book may be so overpriced that it will fail to find a place in many personal medical libraries.

-ALFRED II LAWTON I D. Ph D

SIMPLIFIED DIABETIC MANAGEMENT by Joseph T Bea wood J M D and Herbe t T kelly M D 6th edition 194 pages 11 strat d | B Lippincor Co Philadelphia Pa 1954 Price \$3

This book for the diabetic patient presents in easily understood language the essential facts that he needs to know regarding his disease and its management

The importance of diet and weight control both as prophylactic measures and as treatment is clearly and properly emphasized. The various complications their warning signals and their prevention are adequately described. The unit system of calculating the caloric and nutritive value of foods is explained and a conversion table is presented whereby the unit system may easily be converted into the exchange method recently released by the American Diabetic Association. The instructions for measuring insulin and the technic of impection are clear and concise and are well illustrated with photographs.

The chapter on diabetic hygiene is not as well organized as the others. Under the heading of Sweating Treatment" there is advice regarding the daily cleansing of the teeth taking rest and avoiding worry including the statement that "it is of the utmost importance that the bowels move regularly at least once a day " Nost authorities might question the statement regarding utmost importance especially because it might encourage an overly conscientious patient to fall into the cathatric habit.

These m nor discrepancies do not however appreciably detract from the over all worth of this excellent volume

MEDICAL TREATMENT OF MENTAL DISEASE by D 1 J M C tby
M D LL D nd K tb M. Cor M D w th t by gbt
c t b tor 653 page 11 tr d J B L ppin π C Ph ladelph
P 1955 P 112

The physician is more and more being exhorted to consider the psychiatric aspects of the case in reports published in nedical points and delicated to nonpsychiatric specialties such as surgery gyne cology and internal med cine. This trend reflicts the growing opinion in medical circles that a patient must be viewed as an integrated sociologic entity if the than as simply a cluster of juxtaposed organ systems. Unfortunately these reports usually do not till the consentius reader desiring to mend his ways and to consider the psychiatric factors just how to go about it. The physician hears frequent reference to the facts of life but no one tells him what those facts are all about.

Sensing this ne d for specific information th authors of this book we ought to pres nt th facts. By referring to appropriate the ters the general prictitiner (and the specific tool) will find both the exertic fundamentals and practical and detailed plans for managing each of the while spectrum of psychiatric conditions from the nx ous patient the hypochondriac the pychosomatic problem in differing to male psychotic to the neurologic do so der with psych attric ffect.

In the r agerness to further the cau of the som to appr ach t mental illnes th auth s are often perhaps too busy riticizing the psychologic approach Early n the book s much th t is p dantic d onorous. The style s platit di ous and full of generalizations.

onclus on emerg from unclear logic and scantily or vaguely sup ported ev dence homilies and dogmatism are allowed to compete for attention with demonstrable facts

H ppily the enthusia m subsides after the first few pages a d more bjective di cu ion takes over The re der should not trust his first impre ion Th therapeutic a d for nist discussio in the main body of the book employ bal need approach g vi g both psychologic and organ c rechnices the r just due The authors have made rem rkable progress tow rd ccomplish ng the r goal

No other bound vol me I know of does quite what this book does One can anticipate that it will be to the general prictitioner what Leo Alexande is T atm tof M ntal D sorders is to the psychitrist a reference and guide to the eof organic therapy to upplem in and enlarge psychothe app. It can be stitled the following the psychitrist pychiamic socil worker psychitic number of attending deline I between the psychiatrist and other medical specialists in the following the general practition entry to bis patients.

The subject is so extensive that in this single volume the authors must limit discussion of some of the sections to a summary or oxline Pethaps they should have only mentioned or omitted entirely some of the well known organic illnesses such as paresis which are more thoroughly treated in books specifically devoted to the subjects and thus saved space for more discussion of multiple attack on such problems as psychophysiologic diseases

But all in all this book is clearly a significant contribution to med icine. The need for it is great it does much to meet the need. And it shows the way further to broaden the approaches to medical diagnosis and therapy—WILLIAM F SHEELEY LI COI USAF (MC)

THE NURSERY SCHOOL by Katherine H Read. 2d edition 297 pages illus trated W B Saunders Co Philadelphia Pa 1955

This refreshing book reads almost like a text on the mental health of the nursery school child. The nursery school is identified as a human relationships laboratory, wherein the day's activities are used as laboratory experiences in the study of children to promote the better understanding of human beings. The word laboratory is used in the sense of growth of learning not only on the pair of the child but also of the teacher and patent. Laboratory is not intended to connote any scientific conditions of controlled study. The author acknowledges the complexities of human behavior and hesitates to propose any ready made formulas for solving nursery school problems because "we realize that as yet we know only a little of all that we need to know about people

Practical projects (homework) and carefully selected references are appended to each chapter. The book is punctuated with many photographic illustrations as well as selected brief case studies which contribute heavily to the vivid portrayal of the behavior of children in the nursery school laboratory.

The author fulfills her responsibility in this new edition to continue to promote our understanding of children. This is important because the kind of human beings we bring up will determine the kind of world we have. The responsibility belongs to all of us who bring up children. Miss Read writes well in an easy descriptive style which will have wide appeal to a large lay audience.

-FRANK KILLIAN J LL Col USAF (MSC)

WHEN MINDS GO WRONG by John Maurice Grimes M D 246 pages The Devin Adair Co New York N Y 1954 Price \$3 50

Throughout this book there is considerable animosity and indignation shown toward the American Medical Association the psychiatric profession private sanitariums and state hospitals and their administrators. The author belitrles many of the modern methods of established psychiatric practice condemns the manner in which patients are treated in private institutions and in state hospitals and quotes frequently 1946

and at length acc units from p tients attempting to show that the men tally ill are treated with sadistic volence th t well patients are con fined to these hospit Is against their will at dhat the administrators of most state ho pitals are bound by politics in their management of these facilities

A lay reader of this book with no knowledge of the true cond tons in most state ho pitals and private sanitariums would undoubtedly form the impres ion that present methods of caring for the mentally ill are not much improved from those of medieval times. This book is so colored his dead by the author's apparent conditioned bitter ness toward certain medical organizations and individual state hospital administrators that it can only do more harm than exact

-GERALD W SMITH Capt (MC) USN

DOCTORS PHILATELIC by O rG ttfrt d 96 page all tra d The Am Phys Inc N w York N Y 1954 P \$5

This book is die tive of the growing interest in top c 1 st mp collecting in gener 1 and in medical t mp coll cting n particular. The author who is the publisher of The New Y rk Physician h is for quite some time edited a column in thit magazine entitled. Medicin and Stamps. The publication his evolved from this column.

Medical t mp can and do include portryals of ho pitals s toria drug and nursing loo there are Red Cross and TB seals but in this little volume of le s than a hundred pages Mr Gottfried ha limited himself to tamp d picting m n who in some way or other wire c nn cted with medicie. Walter Reed obvious the Congo with the Doct r is inevitable G gor M ndel is we loome but why uch men though great in their r spective fields as George Washington and Dante Alighi. The uthor gives his reas ns bit his reviewer s noon need.

Let if stamps of the type were limited only to famous doct there would not be the git wealth and varity of medical phility as existed today. See exists I ke Pasteur who did so much for medicine. William Hinty Harrison who studied medicine fir bit abri fitme under Benjamin Rush then wining military fame became ninh President of the United Stites Geirges Clemince with though a full fledged Doctor of Vedicine won fam in the field of politics. Peter the Great of Russia who to quote the uthor. While not a doctor he is said to have oper ated on miny of his significant all the eard many other finge medical men contribution to the familian tion of this particular branch of topical stamp collecting.

Collect rs of m dical stamps and this is an underst tement will certainly and f r a long time to come be indebted to Oscar Gottfried for his book—ROBERT WALKER DAVIS

New Books Received

Books received by the U.S. Armed Fo ces Medical Journal recknowledged in this department. Those of greatest interest will be selected for review in a later issue

- CIBA FOUNDATION COLLOQUIA ON ENDOCRINOLOGY Volume III The Human Adrenal Cortex by editors for the Ciba Foundation G E W Wolstenbolme O B E M A M B B Ch and Ma ga et P Cameron, M A A B L S assisted by Joan Etherington, 665 pages 227 il isustations Little Brown and GC Bo ton Ma s 1955 Price \$10
- MANAGEMENT OF DISORDERS OF THE AUTONOMIC NERVOUS SYSTFM by Louis T Palumbo M D 186 pages illustrated The Year Book Publishers Inc Chicago Ill 1955 Price \$5
- HISTORY OF THE SECOND WORLD WAR United Lingdom Medical Series Editor in-Chef Six A thur S MacNalty & C B M D F R C, P F R C S THE ROYAL AIR FORCE MEDICAL SERVICES edited by Squadron Leader S C. Rexfo d Welch M A M R C S L R C P R A F Volume I Administration. 611 pages illustrated Published by Her Majesty s Stationery Office London E C, 1 1954 To be purfrom York House Kingsway London W C 2 Price 70s net (\$12 60)
 - SURGERY OF THE ALMENTARY TRACT (Bickham-Call ode) in three volumes by Richa d T Shackelfo d M D assist d by Harmond J Dugan M D Volume I Esophagus Stomach and Duodenum Liver Gallbladder and Extanhepatic Biliary Ducts pages 1 862 Volume II Pancreas Spleen Sm II Inte tine (J) jumin & Ileum) Peritoneum Omenta and Mesent y and Colon p ge 863 1 634 Volume III Anorecal Tract and Existion of The Rectum Hermia of the Gastroi restinal Tract and Incisions pages 1 635 2 575 1 705 illustrations K B Saundes Co Philadelphia Pa 1955 Price 506 fo three volumes
 - A TEYTBOOK OF MEDICINE edit d by Russell L. Cecl M. D. Sc. D. Rob nf F. Loeb M. D. Sc. D. D. Hon. Causa Lt. D. and As ociate Educor Alexande B Gutman, M. D. Ph. D. Walsh McDermott M. D. and Harold G. Wolff M. D. 9th edition, 1786 pages illustrated W. B. Sundiers Co. Philadelphia Pa. 1955.
 - THE MASA OF SANITY An Attempt to Clarify Some Issue about the So-Called Psychop the Per onality by Hervey Cleekley M D 3d ed tion, 596 page The C V Mo by Co St. Louis Mo 1955 Price 19 50
 - MEDICAL AND PUBLIC HEALTH LABORATORY METHODS Succes or to Fifth Edinon of Laboratory Methods of the Unit d State Army Ed ted by James St vens S mmons M D Ph. D Dr P H S D (Hon) and Cl on J Gentzko M D Ph D 1 191 p ges 115 illustrations and 9 pl tes 1 color Lea & Febig r Philad [phia Pa 1955 Price \$18 50
- THE SPINE A Radiological Text and Atla by Berna d S. Epste n, M D 539

 Page 721 illust to s on 331 figures Le & Febig r Philadelphia
 Pa 1955 Price \$16 50

- FORFIGN ANIMAL DISEASES Thur Pive to Diago d C tr 1 Of INN ANNAL DISEASES IN MEP WE TO Diago de Critor f IR port fith U ted Star L v tkS tayA o aut 1954 Cp may be p h d form h Se tany-T ur USL rok Sa tyA ocus I W tSta St T t N J P 1 \$100 agl py 2 to 50 c p s 75 t h 51 orm ope 60 cet
- THE STRUCTURE COMPOSITION AND GROWTH OF BONE 1930 1953 A RIBLIOGRAPHY C mpld by M 1 ry C Sp nc B blog ph a d
 K ther Ubl R free L bra 1a Arm d F M d l L b y
 R fe D son. P bl h r S p t d t f D cume U.S P t g Off W h gto 25 D C Ma h 1955 P \$1 G nm
- THE HALOGENATED ALIPHATIC OLEFINIC CYCLIC AROUATIC AND ALIPHATIC AROMATIC HYDROCARBONS INCLUDING THE HALO-GENATED INSECTICEDES THEIR TOXICITY AND POTENTIAL DANGERS by W F v O tt g M D Ph D P bli H lihs P bl t N 414 1955 F l by S p ted t of Do m nt U S G nm P t t g Off W h gt 25 D C.P \$250
 - COLLECTED PAPERS OF THE MAYO CLINIC AND THE MAYO FOUNDA TION V lum XLVI 1954 d ted by R b d M. H w tt M. A M. D A.B.N. I.g. M.D. J.b. R.M. B.A.S. D.J. M.R. F.W. II. M.A.M. D. M. B. M. B. B. D.J. J. M. R. E. km n, A.B. M. B. M. A. P.b. D. M. Katbac Smith B.A. Cal M. G. mbll A.B. M. D. M. P. H. F.I. Shm di B.S. E. d.G. g. G.St lueil. A.B. M.D. 843 p.ge. II. trid % B.S. md. Co. Phild diph P 1955
 - PATHOLOGY FOR THE SURGEON by W ll m B yd M D F R. C. S FRCPMRCPFRSLLDDS(Man,) MD (OI) 7th dt n. 737 pg 547 llustrt ns lud g 10 lo WBS ad CoPhild lph P 1955
 - DENIAL OF ILLNESS Symbol d Physig 1 Apt by Edwar A.

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 - PRACTITIONERS CONFERENCES H ld t Th N w Y k H p t l C nell M d al Cet V lum I d d by Clud E F kne M D F A C.P 411 pge 15 ill ert Appl n-C ntury-Cr ft I New Y k N Y 1955 P \$6.75
 - NURSING d by th T b g St // f th H us h ld Nur g Ass ution, B M d d d by H l Z G ll R N 4th d n. 749 pag ll lustrated The Macmall C N w Y k N Y BASIC NURSING 1955
 - OBSTETRICS by I P G bill M D 11th ed t 1088 pag 1170 1 I m ms o 910 f gur 144 lor W B Saund Co Phidi ph P 1955
 - SURGICAL FORUM Pr ed g f th Forum S ns Fortieth Cl c l C ng e f th Ame C ll g f Surg Atla t C ty N J N mb 1954 851 pg ll tr d W B Sand Co Phil d! 1955
 - CLINICAL BIOCHEMISTRY by Abr bam Cant ow M D Ph D 5th ditt 738 pg Hustra d W B Saund C Ph I d lphu P 1955
 - GENERAL FNDOCRINOLOGY by C. D. Il Turn Ph. D. 2d. dt.
 553 p. ge llus at t. d. W. B. S. ad r. Co. Ph. l. d lphua. P. 1955

INSTRUCTIONS FOR AUTHORS

The United States Armed Forces Medical Journal is devoted to the publication of original investigations ob eviations and clinical experiences of interest to personnel of the medical services of the three military departments. Contributors who are affiliated with one of the military services in a commissioned enlisted or civilian capacity should forward manuscripts to the Surgeon General of the United States Army. Navy or Air Force. Washington 25 D. C. in accordance with evisting regulations. The covering letter should state that the author desires the manuscript to be given consideration for publication in this Journal. Other authors should send manuscripts directly to the editor. Accepted manuscripts become the property of the Armed Forces Medical Publication Agency and will not be returned.

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An original typewritten copy of each manuscript with wide markins on unruled paper size 8 by 10½ inches must be submitted. Carbon copies are not acceptable. All written matter including references must be double-spaced. Articles are accepted with the understanding that they are submitted solely to this Journal and that they will not be reprinted without the permission of the editor. A brief factual summary which is complete in itself should conclude each paper. The editors reserve the privilege of editorial modification. The senior author will be furnished with a proof of his article prior to publication and with a generous number of reprints without cost. Authors are responsible for the accuracy of their statements.

REFERENCES

References to published literature should be listed at the end of the article in the numerical order in which they are cited in the author's text. Care and accuracy in their preparation will expedite publication of the article. Following are correct examples of references

Fleming A Young M 1 Suchet J and Rowe A J E Penicillin content of blood serum after various doses of penicillin by various routes Lancet 2 621-624 Nov 11 1944

Content to those serum after various doses of penician by Various routes Lancet 2 621-624 Nov 11 1944 Cabot R C Perincious and secondary anemia chlorosis and leukemia In Osler W (editor) Mod rn Medicine 3d edition Lea & Febiger Philadelphia Pa 1977 Vol 5 pp 33-100

FIGURES AND TABLES

Photographs should be black and white unmounted and untrimmed glossy prints preferably not larger than 8 by 10 inches in size. If the identity of a patient is recognizable in a photograph it must be accompanied by the patient's signed statement authorizing its publication. The magnification of photomicrographs must be stated. No marks writing or typing should be made on the face or back of photographs. The author's name and an identifying legend may be affixed to the back of each print with paste or glue paper clips pins and staples should not be used. Special care should be given to the preparation of graphs and tables. They should be drawn or printed in black ink on white paper and must be accompanied by an evulnantory levend.

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In this issue * * * * * *

Cardioi ascular Surgery

Estimating Radiologic Hazards

Errors in Anesthesia

Naval Medical Research

Psychiatric Profiling

Mechanics of Medical Meetings

CLINICOPATHOLOGIC CONFERENCE

UNITED STATES ARMED FORCES MEDICAL JOURNAL

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CONT PRINTING OFFICE

CTON 1955

Monthly Message

Two articles have appeared recently to which I should like to invite attention First in the August number of The hatinative Geographic Vagazine there is an imaginative, thoughful narriive about the problems which now confront us in aviation medicine we try to penetrate further and further into space at super one speeds. The solution to these problems depends upon research and its adaptation into practice it affords a complete answer to those who wonder why any research in medicine should be performed by the military and demonstrates the necessity for scientists deficated to this most difficult type of research so that doctors my be properly trained to care for our airmen.

The second article by Air Commodore F E Lipscomb appeared in the British journal *Public Health* April 1955 and has to do with military hygiene

One is encouraged when one compares the advice of Napoleos with that giv n by Commanders in recent years In 1813 Napoleon urged Eugene the Comm ider of his I Corps of select his c mp ite with case but to consult his own common sent and the natives rather than the doctors. Lord Mounbattes Lord Navell and General 5 r Oliver Leese in particular each emphasized the imperative need for good medic I intelligence and strict sanitary disc pline.

And again

We mut be pract ced Lord Wavell said in the use of u wind n gainst dis s a against the tactics of the n my

The Air Commodore describes with great clarity and lively interest to duties to lay of officers concerned with military hygiene, appoints out these airly from the detailed work of the samitary in perfect the health visitor and such groups to the medical officer with devotes I imaelf more and more to organization and administration in anticipation of present and future needs. He concludes

All the p blem y umay say the concern of the re s li nd will the new y umay say the concern of the re s li nd will the new y umay say the concern of the re s li nd will be new y umaters of the results

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MAJOR GENERAL SILAS B HAYS
Sung G l U t d St t Army

REAR ADMIR'AL BARTHOLOMEW W HOGAN
S g G l U t d St t N y

MAJOR GENERAL DAN COGLE S g C l U l d Si i A F

United States Armed Forces Medical Journal

Volume VI

September 1955

Number 9

RESPIRATORY DISEASE RESEARCH

JOHN H DINGLE M D

IT IS INDEED an honor and a privilege to present the "James Stevens Simmons Memorial Lecture," not only because of my deep personal respect and affection for General Simmons, but also because of my interest in the field of preventive medicine to which his philosophy and leadership contributed so much during and since World War II All of us who worked with him felt the impact of his philosophy General Simmons believed in the importance of preventive medicine in protecting and advancing the health, welfare, and security of our nation lie believed firmly that research is the basis of advancement in preventive medicine as in the other medical sciences application of knowledge is essential, but new knowledge must also be sought And he re peatedly emphasized that the military forces hold many unique advantages for intensive and long term investigation

General Simmons implemented his philosophy in a variety of ways One of his concepts led to the establishment of the Army Epidemiological Board and its several Commissions—the fore runner of the present Armed Forces Epidemiological Board The work of these Commissions offers many examples of the contributions that can be made through research in the military forces. I have chosen to discuss the problem of acute respir atory infections in recruits for several reasons, it is a major problem of recruit training the problem was defined more sharply than formerly by studies of the Commission on Acute Respiratory Diseases during the War work on the problem since the War has led to the isolation of at least one of the etiologic agents in volved and finally an effective method for prevention and control may soon be available.

Fom th Shool of Mdcne T str Reerv U vrsity Clvlnd Oh Pr ntd ath furt James Stevens Stromons Memorial Lecture T lt Reed Aimy Mdcal C et 21 April 1955

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Foreword

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A t tS tary | D |e (H lib d M d l).
MAJOR GENERAL SILAS B HAYS

Surg o G l U t d St t Army

REAR ADMIRAL BARTHOLOME W HOGAN

Surg G l U t d St t N y

Surg G I U t d St t N y
MAJOR GENERAL DAN C OGLE

S g o G I U i d Si i A F

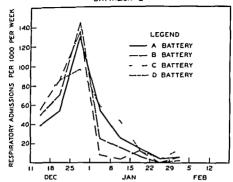
undergoing their first military experience. In November 1943, the rates among both recruits and seasoned men rose abruptly This increase represented an epidemic of influenza A. As the epidemic subsided, the rate in seasoned men declined sharply to low lovels, whereas the rate for recruits remained high, fluctuating with population turnover. Thus influenza behaved differently from the other respiratory diseases, and this difference provides a means of recognizing the occurrence of true influenza in a military population. In the third year, the attack rate for recruits again rose, whereas that for seasoned men remained low. Those patterns of epidemiologic behavior suggested that respiratory disease in recruits differed from that in seasoned men and might constitute a distinct etiologic entity. It also seemed possible that experience with this entity might be a major factor in the "seasoning" process.

Further analysis of the behavior of respiratory disease in bat teries of recruits appeared to support these concepts The flow schedule of the training center was such that batteries were filled with recruits at regular intervals throughout the year As a battery completed its basic training and left the post, a new battery was formed with recruits to replace it, thus providing a population inflow and outflow ideal for these studies Figure 2 shows the behavior of respiratory diseases in four batteries during December and January of 1942 1943-a behavior which was typical during the winter months These recruits arrived during the weel of 11 December Their hospitalization rates rose to a peak of about 140 per 1,000 per week in the third week of training and then declined rather sharply By the end of 5 or 6 weeks there was little respiratory illness But during that period about one third of the men had been hospitalized for respiratory illness and the period of hospitalization averaged 2 weeks. The interference with training is obvious

The influence of season on this phenomenon was consistent during the 3 years of study. The sharpest outbreaks occurred in recruits arriving at the post during the winter months, as is illustrated in figure 3 for the period from October 1942 to January 1943 Rocruits entering during the summer and early fall usually showed a delawed rise. Troops entering in the late spring would have little illness during the summer, but would experience a wave of illness in the fall. Thus the behavior was related to season but not to the stage of training or to physical conditioning.

Finally, the undifferentiated respiratory diseases differed epi demiologically from other known entities. Figure 4 shows the occurrence of undifferentiated respiratory disease, influenza A, and type 12 streptococcal infections in a battalion of 1,000 mem during the period from October 1942 to February 1943. Figure 5

BATTALION Z



gur 2 Adm ssom i for partory dis as for four batt ie a bat il f cr i ihe R pla m nt T g C i fom 11 D cembe 1942 i 5 F b uary 1943

shows the occurrence of undifferentiated respiratory disease and German reasles in five battalions German reasles reached its peak during the same calendar weeks whereas the peaks of repiratory disease varied in each battalion depending on the time of its organization and arrival at the post.

Thus the epidemiologic data suggested that undifferentiated respiratory disease might be an entity that occurred in influenza like epidemics in individual units of recruits during the winter rouths and did not affect seasoned ren to an appreciable degree possibly because of immunity.

The clinical features of these illnesses as seen in hospitalized orcruits were those of a mild respiratory infection of gradual onset. Feverishness chillness and headache were the most frequent complaints Maliase ancrexia and symptoms of massi involvement occurred in about half of the patients. Sore throat was common but was mild in degree \(\text{\chinge}\) initial hostseness and cough were also common although less than half of the patients had a productive cough or chest pain. Only rarely did the patients appear to be moderately or everly ill. Physical signs were

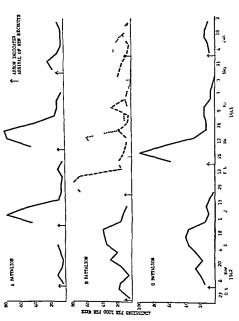
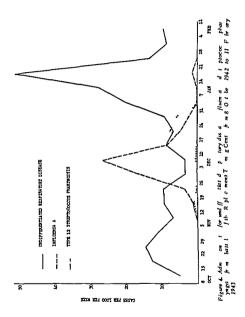
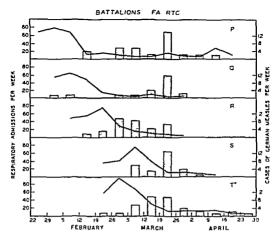


Figure 3, Admission rates for respiratory disease for three battations of recruits in the Leplacement Traini g Center from 23 Octoter 1942 to 2 July 1943

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F gure 5 Admiss on ates for respiratory disease and German measles from five battations of the Replacement Tra n ng Center from 22 February 1943 to 30 Ap 11943

remarkabl, few rarely of intense degree and were noted in less than half of the patients Assal obstruction, mild injection of the pharynx and palate, and lymphoid hyperplasia on the pharyngeal wall were most frequently found Edema of mucous membranes cervical adenopath,, and pulmonary rales were present in about 10 to 15 percent of the patients The febrile course was short, from 2 to 4 days and the average maximum temperature was about 101 F Constitutional symptoms subsided with defervescence, but symptoms referable to the respiratory tract when present tended to persist from 1 to 2 weeks Leukocyte counts were within normal limits and cultures revealed only the normal bacterial flora of the respiratory tract.

Many attempts were made to isolate an etiologic agent or to transmit this respiratory infection to animals known viruses such as the influenza viruses, were not responsible, as indicated by the failure to isolate them and by the lack of serologic evidence. No virus could be isolated in chick embryos nor could the infection be transmitted to experimental animals. Since a similar lack of success was attained with specimens from pa

tients with the common cold and primary atypical pneumonia a study in volunteers was performed Throat washings were collected from a donor who was a recruit and whose illness was typical of the recruit disease After filtration to remove bacteria ren of whom 16 (75 percent) became ill In most of the volunteers symptoms first appeared on the fifth or sixth day after in oculation The symptomatology was somewhat variable but the initial complaints were usually those of dryness or soreness of the throat which developed gradually over a period from 24 to 48 hours Constitutional symptoms were minimal or absent masal symptoms were minimal conyza was absent Physical examination revealed very mild inflammation of the palate and pharvnx and lymphoid hyperplasia No volunteer developed pul monary infiltration either clinically or radiologically. The ill nesses were mild generally afebrile and lasted from 4 to 12 days Laboratory studies were within normal limits. These find ings differed from those obtained with inocula from donors who had the common cold or primary atypical pneumonia with respect to incubation period symptomatology physical signs and course of illness

Remoculation of six of these volunteers with washings from the same recruit donor produced no illnesses indicating probable immunity Subsequent inoculations showed no evidence of heter ologous immunity to the common cold or to primary atypical oneu ronia characterized by cold hemagelutinins

Thus it was concluded that the disease in recruits was a clin ical epidemiologic and possibly etiologic entity. The cause was presumably a virus. The disease was termed. Acute Re spirator, Disease or ARD These studies confirmed and ex tended the knowledge with which military men have long been acquainted that respiratory disease constitutes the major illness problem in recruit training. Other studies have confirmed the essential features of this work

Final proof of the conclusion that ARD is a distinct entity was still lacking however becau e it required the isolation of an agent that could be related etiolo_ically to the disease Hero the problem remained until 2 years ago when Hilleman and Wer ner isolated by tissue culture technics a new virus termed RI 67 from patients with a disease which occurred epidemically among recruits at Fort Leonard Wood Mo which resembled ARD Complement fixation and neutralization tests demonstrated that this virus was immunologically related to the disease diagnosed as ARD and to that occurring simultaneously in a smaller number of patients who had pulmonary infiltration but did not develop cold bemag_lutinins or agglutinins to streptococcus MG



The memory of the late B sgad er General James Stevens Simmons MC USA (Ret) will be bonored annually at a James Stevens S mmons Memorial Lec ture the f st of uh ch was given by D John H Din le General Simmons was born 7 June 1890 n Neuton, N C He received his M D degree from the University of Pennsylvania School of Medicine in 1915 and a doctorate n public bealth from Harvard University n 1939 Commissioned a first lieutenant in the A rry Med cal Corps in July 1916, his assignments in clud d the presidency of the Army Medical Depa tment Research Boa d in Man la and later n the Canal Zo e and d rectorship of the Depa tment of Preventive V dic ne of the Army Medical Service Graduate School As chief of the Prevents e Medicine Seri ce Office of the Surgeon General he was respons ble for the development of a program that greatly benefited the health and welfare of ove 9 000 000 sold ers dur ng World War II He drew up the plans for what is now called the Armed Forces Epidemiological Boa d. The President of Cuba decorated b m with the Calos J Finlay National Orde of Me it in 1944 and in 1945 the U.S. Army awarded him the Dist nguished Service Medal. At the time of his death 31 July 1954 he was d an and professor at the Harva d School of Public Health

Hilleman's results were readily confirmed in our laboratories Moreover it was possible to reappraise the volunteer studies of 1914 and 1910 because sera had been stored from the donors and recipients of the various inocula used in these experiments 10 Acute and convalescent sera from the donor of the ARD moculum showed a rise in neutralizing antibodies to the RI 67 virus those from the donors of the common cold and primary at nical pneu monia inocula did not Examination of the pre and post-inocula tion era of the recipients showed that 20 of the 04 volunteers who received the ARD inoculum showed a rise in neutralizing titers for the RI 67 virus (table 1) In contrast no changes in

TABLE 1 R Its fne trains t trat ns with th RI 67 tra | ARD us a d pr and p t

In culum	t tral on
Acute pura ory d (ARD) P imary typ cal pn mon Comm ld	20/24 0/15 0/35

titer occurred in the sera of the 15 volunteers who received the primary atypical pneumonia filtrate or in those of the 35 volun teers who received the common cold filtrates. Thus only the ARD filtrate was associated with the development of antibodies to the RI C7 virus. The correlation between the presence or absence of RI 67 antibodies in the preinoculation sera and the occurrence of ARD in the volunteers was excellent (table 2) Of the 18 volun teers who became ill after inoculation 15 had no detectable anti body in their preinoculation sera and all showed rises in titer Three men who became ill had antibodies before inoculation but two of them showed increases in titer only one person who be came ill had antibodies before inoculation and failed to develon an increase in titer In contrast of the six men who did not be come ill five had antibodies in their premoculation sera and two of these had increases in titer. One person had no antibodies before inoculation and remained well but he also showed a rise in titer Expressed another way illnesses occurred in 15 of the 16 men who had no detectable antibodies at the time of inocu lation whereas illness failed to develop in five of the eight men who had antibodies No relationship existed between the presence or development of antibodies to the RI 67 virus and the results of inoculation with the common cold and primary atypical pneu ronia inocula

Some information has been obtained regarding the immunologic association of the RI 67 virus to cases of ARD occurring in military installations back to 1942 (table 3) It is apparent that a large proportion of the patients from whom sera were available,

TABLE 2 Correlation of RI-67 neutralizing ant bodies in preinoculation sera of recipients with the occurrence of ARD

Antibody preinoculation		Results of moculation with ARD filtrate				
ser2	Number all	Number not ill				
Absent Present	15 3	1 5				

at Fort Bragg in 1942 and at Sampson Air Force Base in 1953, showed rises in neutralizing antibodies to the virus These cases at both posts occurred during the course of sharp epidemics of ARD in recruits A lower proportion of antibody responses was found at Fort Bragg in 1944 and 1945, but many of these cases occurred during interepidemic periods or at times of low incidence

TABLE 3 N utralizat on titrations with the RI 67 strain of ARD virus and acute and convalescent sera from patients whose illnesses were diagnosed as ARD at military n stallations

Camp	Year	Antibody ri e
Ft Bragg N C	1942 1944 1945	10/12 8/35 1/12
Warren Air Fo ce Base Colo	1949 1951	1/3 0/4
Sampson Air Force Base N Y	1953	13/21

Num rator = umber show ng mrbody is Denom nat = umb rt s d

Only one of seven patients diagnosed as having ARD at Warren Air Force Base in 1949 and 1951 had an antibody response The men at this post, however, had completed their basic training before arrival and could no longer be considered as recruits More extensive surveys have been carried out by Hilleman and associates" in 1952 1953, and 1954 The majority of patients in recruit training centers showed antibody responses particularly those whose illnesses occurred in the fall and winter Little or no evi

dence of the disease was found at two posts occupied by sea soned troops

The etiologic studies thus support the conclusion that ARD is indeed a clinical epidemiologic and etiologic entity At least one causative agent and possibly the principal one as far as epidemic occurrence is concerned is the RI 67 virus of Hilleman and Werner Thus far at least the new cytopathogenic agents isolated by Rowe and associates and Huebner and co-workers from human adenoids and tonsils have not been associated with epidemics of ARD by neutralization tests. It seems probable however that viruses other than the RI 67 strain may cause ARD

The association of ARD with recruit populations raises the interesting question of the origin of the infection. Is it a disease peculiar to military life stimulated in its occurrence by the con gregation of a susceptible population of recruits or does it exist also in civilian life? It is most reasonable to believe that it ex ists among civilian populations Yet in a study of civilian fam ilies in Cleveland now in its eighth year ARD has not been rec ognized with certainty either clinically or epidemiologically Nor has an RI 67 strain of virus been isolated from an illness Examination of seven different lots of gamma globulin prepared from Red Cross pooled plasma however revealed neutralizing titers of 32 to 128 for the RI 67 virus in all of them suggesting that this agent or an immunologically similar one had infected many of the donors A serologic survey of the Family Study population in the spring of 1954 showed that a third of the adults but none of the children (who varied in age up to 17 years) had neutralizing antibodies for the virus (table 4) The sex distri bution among the adults was not equal but no correlation could be found with prior military service. The results suggest that the RI 67 type of virus has not been active in this Cleveland popu lation during the past 17 years. Huchner and associates " how ever have isolated some strains of the RI 67 type so that this virus presumably does exist in civilian populations. It remains to be determined whether or not epidemics of ARD due to this virus can occur apart from unusual population movements such as the induction and training process

The final aspect of ARD to be considered is that of prevention and control Numerous attempts have been made to control the common respiratory diseases in military populations Several studies have been based on procedures designed to prevent or reduce contamination of the air and the air borne spread of in fection such as the use of double bunks oiling of floors and ultraviolet irradiation and glycol vapors 71 times such procedures have appeared to reduce the incidence of respiratory diseases but the results have not been consistent and the degree of reduction has been too small to warrant application of these methods

TABLE 4 The presence of neutralizing antibodies for the RI 67 strain of ARD virus in seria obtained from the members of a group of Cleveland families in the spring of 1954

Subjects	Number	Antibody present			
Subjects	tested	Number	Percent		
Children Adults Mothers Fathers	73 84 43 41	0 29 7 22	0 0 34 5 16 3 53 7		
Total	157	29	18 5		

The use of immunization appears to hold the greatest poten tiality for the prevention of ARD in recruits. As already pointed out, the epidemiologic behavior of ARD suggests that relatively firm group immunity develops in a population that has experienced an outbreak—a phenomenon which is probably a major part of the "seasoning" process I immunity in the individual person was demonstrated by challenge inoculation in the volunteer studies. Moreover, susceptibility or resistance to clinical infection was correlated directly with the absence or presence, respectively, of circulating neutralizing antibodies for the RI 67 strain of virus, and such antibodies developed during convalescence. The RI 67 strain of virus, at least, appears to be a good antigen. On theoretical grounds, therefore, active immunization should be effective. Work on the production and evaluation of a vaccine is now in progress in several laboratories.

Consideration should also be given to the use of passive immunization for the prevention of ARD in recruits during winter months. At that time of year inductees may arrive at training centers with respiratory disease rates already elevated and may experience an epidemic during the next 2 to 3 weeks. Thus sufficient time might not be available for active immunization to be effective. As already mentioned, several lots of human gamma globulin have been shown to contain high titers of neutralizing antibodies for the RI 67 strain of ARD virus. The possible that selective passive immunization of recruits with gamma globulin could prevent or greatly modify the epidemic occurrence of ARD. It is hoped that this procedure can be evaluated in the near future.

In conclusion, it now appears probable that at least a partial solution to the problem of ARD in recruits may well be at hand

The accomplishment of this goal will indeed represent a tribute to the vision and leadership of General Simmons

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EXPERIENCES IN CARDIOVASCULAR SURGERY

II Mittal Stenosis Atrial Septal Defect Miscellaneous*

WELDON J WALKER Lieutenant Colonel MC USA
WARNER F BOTERS Colonel MC USA
HENRY C HARRELL Colonel MC USA
CLESTON W GILPATRICK Major MC USA
JOHN E COLES Captain USAF (MC)
RICHARD F BARQUIST Captain, MC USA
GARTH B DETTINGER Captain USAF (MC)
DONALD FAHY Major MC USA
THEODORE H NICHOLAS Major MC USA
RALPH H FORRESTER Major MC USA
RALPH H FORRESTER Major MC USA

A MITRAL STENOSIS

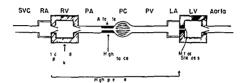
RHEUMATIC heart disease results from an altered antibody response to infection by group A beta hemolytic strep tococci and in the chronic form involves primarily the mitral and actic valves in the past all forms of rheumatic heart disease accounted for about three percent of deaths from heart disease, a figure approximating the total number of deaths from all forms of congenital heart disease. The incidence of rheumatic heart disease is declining it is now about half what it was 20 years ago, and with better treatment and prevention of streptococcal infections one can confidently predict an even greater decline in the next 20 years

Mittal stenosis is from two to three times as common in women as in men Pathologic physiologic findings in this condition are illustrated in fig 6 The normal mittal valve area is from four to six square centimeters. It is in direct communication with the pulmonary capillaries via the pulmonary veins, without the bene fit to fintervening valves or baffles. As the mittal valve contracts, certain compensatory mechanisms must take place if the cardiac output is to be maintained through this narrowed opening. The first compensation is a rise in pressure in the left atrium and pulmonary capillaries. Another is a decrease in the cardiac output, with the tissues extracting a greater portion of the oxygen from the circulating blood. These means of compensation are limited however, because the pressure cannot rise much above

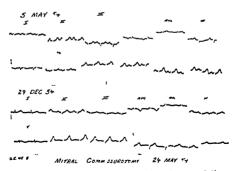
Fom Booke Amy H pit! FortSm Huston Tex Preetdas symposum tith m hly tfin et g n 9 N embe 1954 Part Iw publ bed th Ag t 1955 is use of the Jum !

30 mm Hg lest it exceed the osmotic pressure of the serum proteins with resulting pulmonary edema. The early symptoms of tight mitral stenosis are exertional dyspnea orthopnea he moptisis attacks of acute pulmonary edema without a grossly enlarged heart venous distention and henatomegaly or other

DIAGRAM OF PATHOLOGIC PHYSIOLOGY OF MITRAL STENOSIS



F gure 6 Pathol gs phy iolog f ndi g i mit l s no is (R p oduc d with permi io f om D xi L Pathol gic physi l gy of mit al xi is and it ungic l mplc 1 ns B II N w Y k A d Med 28 90 105 Feb 1952.1



Figur 7 Electrocard ogram befor and ft mit al mmi I ight unt la hypertrophy has dis pp ar d The cha g i le d I nd v most tiki g

evidence of right heart failure When the mitral valve area de creases to about 1 sq cm in area, a third compensation appears, namely, narrowing of the arterioles and small arteries in the lung with proliferation of the intima and hypertrophy of the media of these vessels. This increased pulmonary resistance prevents the right ventricle from pumping an increased amount of blood into the lungs on evertion and, although respiratory symptoms may improve, there is a low, fixed cardiac output characterized by weakness, exhaustion, fatigue, enlargement of the right heart and pulmonary artery, eventual peripheral venous engorgement, hepatomegaly, and edema. These pulmonary vascular changes seem to be at least partially reversible if mitral stenosis is corrected.

The most reliable, and incidentally the most economical, method of diagnosing mitral stenosis is by recognizing the char acteristic low pitched diastolic rumble, like distant thunder, at the apex Contrary to its description in most texts it nearly always has an early diastolic component which if present establishes the diagnosis If one imagines the second heart sound as caused by a stick striking a drum it will sound as though the stick is loose and is continuing to vibrate, thus producing a low pitched rumble. In addition, the apical first sound is accentuated and if there is sinus rhythm, is preceded by a crescendo presystolic rumble. However, one needs the early diastolic rumble to make the diagnosis from auscultation alone because a split first heart sound can simulate a crescendo presystolic murmur. The early diastolic murmur of mitral stenosis does not have the high pitched blowing character of other cardiac murmurs and many physicians even fail to recognize it as a murmur.

Figure 7 illustrates a rather characteristic electrocardiogram with evidence of right ventricular hypertroph; in a patient with a tight mitral stenosis. The electrocardiogram reverted to normal following mitral commissurotoms. Particularly noteworthy are the regression of the S wave in lead I, the decreased R wave in lead V,, and the decrease in size of the broad prominent P waves.

Surgical intervention is recommended if the patient has sig nificant disability from his disease and if mitral stenosis is thought to be the primary valvular defect. Age is no contraindication to operation.

ROENTGENOGRAPHIC FINDINGS

The most important roentgenographic sign of mitral stenosis is an enlarged left atrium. The same weight should be attached to this finding as to hearing the characteristic murmur. Atrial enlargement may be shown in several different ways but may be

apparent on the roentgenogram of the chest as seen in figure 8 flus illustration is characteristic of the heart silhouotto ascen in a typical case of mitral stonosis. The straight left border results from enlargement of the pulmonary artery is enlarged but it is the left branch that causes this border of the heart to lose its concavity. A relatively small acrite knob also contributes to the apparent straight left border of the heart. The double density seen through the heart shadow on each side of the spine is caused by the enlarged left atrium. It is relatively uncommon for it to be as well demonstrated as in this case.

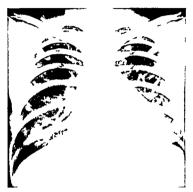


Figure 8 Roentg ogram of pat twith mt l t no The gr tly la ged left tr m d hl den ty

The left atrum onlarges in all directions and displaces the esophagus backward and to the right Displacement of the barium filled esophagus should be the first sign sought in the roomtgenographic study of pritents with a suspected lesion. Another common finding is elevation of the left main bronchus with resulting widening of the carina.

The ri ht ventricle enlarges and eventually contributes a great deal to the over all cardine size. The left ventricle may be smaller than normal due to the decreased cardine output. Angiocardiography reveals poor visualization of the left von tricle because of a "hold up" of opaque material in the left atrium. The intracardiac circulation time may be increased markedly. In one of our patients it was three and one half seconds after the left atrium filled before an appreciable amount could be shown in the small left ventricle (fig. 9).



Figure 9 Angiocardiogram n 1 ft anterior oblique view showing opacities of right ventricle pulmorary a tery and left atrium. The "cold ap" of acropaque material in the left atrium is demonstrated and the swa e atricle is poorly v sualized. This is a characterist assumption of the swall and the swall are swall as a characterist assumption of the swall are swall as a characterist assumption.

SURGICAL CONSIDERATIONS

In an anterolateral position, the left side a opened, the pericardium is incised, and two protections are placed about the base of the left auriculation of the clamp has been placed and the top of

has been amoutated the clamp is loosened to allow free bleed ing If no clots are present the operation can proceed In our series we have not encountered clots in the appendage nor the chamber When the index finger is introduced the valve orifice is felt for size location consistency, and regurgitation In our experience minor regurgitation has been corrected by opening the valve so that it can function more normally We have not encountered a jaggedly calcified valve nor, to our knowledge has an embolus occurred in any of our patients. In each case we have employed the finger fracture method and have not used the various valvulotomes We usually have found a fibrotic valve and have broken it open more anteriorly than posteriorly to avoid the acrtic area Fqually important is the protection of the coromrs arters on the ventricular surface and the prevention of runture of the atrial or ventricular wall with the finger Also the finger must not catch and tear the chordae tendinese which are so important in valve function. The tip of the index finger is wrapped with umbilical tape to a circumference of 7.5 cm and then another glove is put on over this Thus a standard finger is produced and when this is pushed through the valve we know that it has been opened to a 9 5 cm diameter Furthermore in fibrotic valves the obturator goes through fairly easily and causes less trauma to the heart wall We proceed carefully making sure that progressive opening of the valve is not caus ing or increasing regurgitation. The working finger is kept in the valve orifice for very short periods of time When the valve is oponed we tie down the purse string suture as the finger is withdrawn and the cut edges of the appendage are closed by several interrupted sutures. We have not found carotid compression necessary nor desirable

RESULTS

The first mittal commissuration, was performed at this hospital on 5 beptember 19 ° Since then 21 such operations have been performed. There are two categories of pritients on whom this procedure has been carried out (1) Pure mittal stenosis (16 cases) and (2) mittal stenosis with recurrentation (5 cases).

Of the 16 patients with pure stenosis the valve in each was 08 to 10 cm in diameter or less before commissurotomy and vas opened to 5 cm in diameter or 65 cm in circumference Calcification vas considered to have been present in two prients and the chordre tendinene vere thought to be mildly in volved in one. There were no operative or postoperative deaths in this series. Postoperatively however two pritents developed complications one having a recurrence of rhoundite activity and the other having a pericarditi and later complete subsidence of all activity. Follow up on these 16 patients ranged from three months to two years. There are six patients in whom

I was too early for a follow-up report bu they were reported to be doing well. Of the remaining 10 patients, two were taking digitalis but remained physically active seven patient reverted to complete activity and one patient did not have a follow-up because she signed out of the hospital and was reported to be working as a waitness two weeks later Posicoera_vely all patients were placed on a course of penicilling given crally

Of the five patients with mitral surrosis and regurgitation the valve in each patient admirted the finger easily all-bough there was a fusion of the commissures to some extent in all cases Calcium was reported to have been present in one patient, and the pos erior leaflet of the mittal valve was described as absent in another. The commissures of three patients were split, with an increase in reguratation in two of these and no change in the other in two of the patients no anatomic change was effected There were no operative or postoperative deaths among these five patients. Three however had recurrences of cardiac failure In addition to this one of these tiree patient: developed severe hepatitis and another one had preumonia Two of the patients had a relatively uncomplicated course Follow up studies again ranged from three montas to two years It was too early to report the follow-up on one of these ra lents the other four were all on reduced physical activity and required digit.lis and other cardiac med cation It was believed the in this group of pa iente beneficial resulte had not been obtained.

In summary the patients with pure mittal stemosis were all considered to have benefited from their operation, whereas no benefit was demonstrable in those with mittal stemosis and regringitation. In the entire series there were no operative or rest-operative deaths.

TABLE 2	Pre and post-opera we cara ac calletermat on fine	¢
	ngs in a ients with mitra stenasis	

Case number	Properative reasure pressure	Po mpenanye nght yeamoula pressure	Interval berwe-n studies (months)
	8/6 mm F.	29/6 mm. Fg	5
2	105/5 mm Fg	27/2 mm. Hg	<u>-</u>

CATHETERIZATION DATA

Two patient: with mitral stemosic had pre- and post-operative catheterization studies (table 2)

The time interval between the preoperative and postoperative studies may not have been long enough to allow for maximum

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improvement. This limited experience to ether with the reports in the literature indicated that pulmonary hypertension is reversible following corrective cardiac surgical intervention. The improvement in the abnormal cardiac dynamics was important evidence that the good clinical results of mitral valuations are in fact due to the operative precedure and are not as some have suggested the result of increased rest better medical management and suggestion

B ATRIAL SEPTAL DEFECT

Atrial septal defect according to Taussig is the most com mon congenital malformation of the heart in young adults and the one most often incorrectly diagnosed. About half the patients with this disorder have symptoms of decreased exercise toler ance from birth associated with frequent chest colds while the other half get along well until about 20 years of age at which time they often manifest pulmonary symptoms. Their average life expectancy is relatively good about 40 years which is better than for most forms of congenital heart disease but is still nearly 30 years below average. Atrial septal defect is a killer but a slow killer The disorder occurs two or three times as frequently in women as in men most of these patients tend to be small and poorly nourished, perhaps due to the decreased systemic blood flow They do not manifest clubbing and cyanosis is usually observed only as a terminal event when the right heart fails resulting in a right-to-left shunt. Frequently these patients have substernal pain on exertion which is relieved by rest but not by nitroglycerin and is probably the type of pain recently described by Viar and Harrison as due to distention of the pul monary artery

The usual cardiac findings are an accentuated second pul mone sound and a systolic murmur of varying intensity in the pulmonic area about half of the patients have a thrill in this region. The murmur appears to originate in the pulmonary artery, not at the site of the atrial defect. Turbulence is cau ed by the marked increase in pulmonary blood flow through a dilated pulmonary artery that lies in close proximity to the anterior chest wall. Dilatation of the pulmonary ring may cause pulmonic in sufficiency with a resulting high pitched diastolic murmur along the left sternal border Cocasionally an apical diastolic rumble is heard perhaps due to the large amount of blood that enters the heart during each diastolic pause.

The rechausers involved in producing the clinical picture center around the tremendous left-to-right shunt that takes place through the defect which usually exceeds 2 cm in diameter. The mean pressure in the left atrium is normally 2 to 4 mm. Hig greater than in the right. The tendency for left-to-right shunting of blood is further enhanced by the fact that the tricuspid valve is much larger than the mitral valve It normally will admit four fingers as against two for the mitral valve, consequently, the right ven tricle fills more quickly than the left and, because of its thinner wall, is more readily distended by the pressure from what, in effect, is a common atrium. The large systolic output from the right ventricle distends the pulmonary arterios and produces the characteristic hilar dance seen on fluoroscopic examination. In spite of the large pulmonary blood flow the majority do not develop significant pulmonary hypertension until late in their disease, and in this event their prognosis becomes poorer.

Rushmer and others to recently afforded an explanation as to why these patients often do so well in spite of the fact that the right ventricle is pumping tremendous volumes of blood. The left ventricle has the form of a concentric cylinder, which is the ideal form for a pressure pump. On the other hand the free wall of the right ventricle is draped around the convex surface of the interventricular septum like a bellows, which is an ideal arrangement for a volume pump but ineffective for a pressure pump. Rushmer and associates demonstrated that, in fact, the right ventricle normally contracts in the manner of a bellows

Unlike other forms of congenital heart disease atrial septal defect is only infrequently complicated by subneute bacterial endocarditis

Short of surgical exploration a conclusive diagnosis of attial septal defect can be made only by passing the cardiac cathoter through the defect A reasonably sure presumptive diagnosis can be made, however, by demonstrating an increased oxygen content of the blood in the right atrium as compared with samples from the vena cava, but anomalous pulmonary veins draining into the right atrium could produce the same findings.

ROENTGENOGRAPHIC FINDINGS

This is another heart lesion characterized by a marked in crease in blood volume flowing through the lungs Enormous enlargement of the pulmonary artery is characteristic of this disease. The right branch may be particularly prominent on the chest reentgenegrem (fig. 10) Aneurysm at this site occurs not uncommonly Widening of the carina may result from an enlarged pulmonary artery.

There is often a marked increase in the size of the heart which is largely contributed by dilatation of the right ventricle. The left ventricle and norta are small by comparison

The retrocardiac space remains clear because there is no en largement of the left atrium. The right atrium, on the other hand, ordinarily enlarges almost as much as the right ventricle. This

is an important point in differentiating this condition from patent



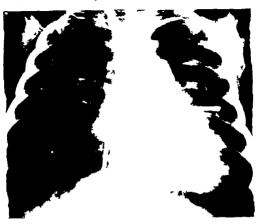
Figur 10 E la geme t fibe ght p lm nay artery t ly neury mal fr port ns pr mimenc fibe ight atri m nd incre sed p lmonary vuscula ity a e v de t this oe ig gram fa patie t u th at sal ptal def t

Cardiac catheterization (fig 11) is particularly valuable in interatrial septal defect not only for the abnormal physiologic findings demonstrated but also for the passage of the catheter through the defect.

SURGICAL CONSIDERATIONS

Our first four patients were operated on by Dr Charles P Bailey Philadelphia Pa who used his doughnut procedure of suturing the anterior atrial wall to the edges of the septal defect. This procedure may interfere with blood flow from the superior vena cava but was technically successful in our patients. The remaining patients were operated on by Dr John J Kralik and one of us (WFB) At first we used the Crafoord stitch which is introduced between the superior vena cava and the aorta and pas es down through the edge of the septum and its defect to emerge near the inferior vena cava. The ends of the suture are passed behind the inferior and superior cavae and when tied snugly the defect is obliterated. It is difficult to place this stitch correctly and we were reluctant to depend on

one silk suture for our repair At about this time, Gross and Watkins'11 article was published and we supplemented the Cra

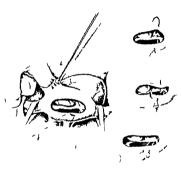


F gure 11 Ca duc cathete ization in a pat ent with inte atrial septal defect.
The cathete extends from the right at ium through the septal defect and left at um and into a pulmonary vein

foord stitch with several mattress sutures of the Gross type to support the closure Next, we abandoned the original Crafoord stitch and used only the Gross stitches to bring the edge of the septal defect over to the atrial wall laterally (fig 12). This is somewhat difficult because the tugging of the cardiac impulse tends to tear the needle through the septal edge, especially when, as in several of our patients the septum is entirely a membranous structure. Our postoperative follow up seems to indicate that those sutures may subsequently tear through and it is our opinion that an open procedure under direct vision with a quiet heart will be the final answer to the problem. We have postponed further operations for closure of septal defects pending further developments in this highly technical field.

RESULTS

At this installation in the past 12 months, 11 persons have been operated on for interatrial septal defects. These were seven women, ranging in age between 21 and 35 years, two girls aged eight and 13 years one man aged 21 years and one bon four years In nine patients the defects were succe full clear while in the remaining two (both adult females) the open was limited to exploratory thoracotomy In one of these car exploration was not performed because of marked bleeding to ency associated with diminished prothrombin concents a thich would have made sufuring of the septum very hazardr In the second patient the anomalous drainage of the z on of the segmental verns of the right lung senarately into the perior vena cava and right atrium necessitated abandoment the procedure



1 p 12 Tebre [1 at val plat def ct by the G ss method

INTIC ATTIONS

All patients had symptoms referable to the atrial defect operatively Four of these patients had at this time or in past right ventricle failure All patients presented findings a significant left-to-right shunt with arteriolization of the t atrial blood and all had some degree of pulmonary hypertens. in two of these patients systolic pressure in the right ventr and pulmonary artery exceeded 100 mm lig

FINDINGS

Of the nine patients subjected to intracardiac explorat interitrial septal defects were found in all ranging in size o 5 to 4 cm while in three patients two defects were presAll defects were of the foramen secondum type, except for the presence of a persistent ostium primum in the four year old boy. The latter case was the only one in which there was significant question regarding completeness of the closure.

COMPLICATIONS AND FOLLOW UP

There was no mortality in the series and the early compli cations were associated with transient cardiac irregularities. such as auriculoventricular block or atrial flutter occurring in about four of the patients In two instances, incomplete auriculoventricular block has persisted since the operation. Three remote complications were recorded in clinic records. One patient developed subacute bacterial endocarditis three weeks postoper atively She was treated with massive doses of antibiotics for six weeks and recovered Follow up examinations showed satis factory improvement, but the patient remained nervous and very heart-conscious A second patient developed pneumonitis and pleurisy of the left lung six weeks postoperatively which might have been entirely unrelated to surgical intervention He re covered completely and was asymptomatic and on full activity one year postoperatively A third patient developed pericardits with effusion two months postoperatively. This was thought to be a reactivation of tuberculous pericarditis, although this was never proved She improved under antimicrobial therapy and is now at home under continuing therapy. Her condition does not appear to have been improved by operation

In general, seven patients showed improvement following oper ation. The four year old patient who had a persistent ostium primum failed to show significant improvement postoperatively and there was doubt that complete closure of the defect had been accomplished.

ELECTROCARDIOGRAPHIC PATTERNS

It has been reported in the literature that the incidence of abnormal electrocardiographic findings is high in congenital heart disease, and that patients with atrial septal defect have a high incidence of incomplete right bundle branch block it therefore seemed worth while to study the cases of uncomplicated atrial septal defect which have been proved by catheterization at this hospital and identify the types of electrocardiographic patterns that were present

For the purposes of this study, electrocardiograms were class itied as showing incomplete right bundle branch block provided the typical pattern was present without regard to the duration of the QRS complex Figure 18 is a reproduction of the electrocardiogram of one of the patients of this study, illustrating the typical findings of incomplete right bundle branch block Thero

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is an S wave in lead I an RRI in the right precordial leads and a persistent S wave in V. In addition there is in this case a slight prolongation of the QRS to 0.10 sec.

Figur 13 Elect oc d g m how g nc mpl t ight b ndl branch block pat tw tha tial ptald f t

At the time of this study there were 22 patients with the diag nosis of uncomplicated atrial septal defect and findings in these cases formed the basis for the data shown in table 3

TABLE 3 Ele too d gr ph fnd g w th t tal ptald f t	22 p t t
El cad graph fdg	Numb f pat nt
I mpl t night b dl bra h block R ght or l byp tr phy C mpl t ght b dl bra ch block Norm l tra g	16 4 1 1
T tal	22

In conclusion the electrocardiogram is a particularly valuable adjunct to the study of patients with this defect A normal electrocardiogram casts considerable doubt on a presumptive diagnosis of atrial septal defect. On the other hand a pattern of incomplete right bundle branch block definitely supports such a clinical impression. Finally, these data are in general agreement with those in the literature.

CATHETERIZATION DATA

Of the nine patients with atrial septal defect who were sur gically treated at this hospital four were catheterized postoperatively (table 4) Baker and others's observed that lowering of the abnormally high right ventricular and pulmonary afters pressure may con tinue for from 12 to 18 months Therefore, these studies may not indicate the maximum improvement in these patients

C OTHER CARDIOVASCULAR OPERATIONS

Tetralogy of Fallot Eight patients were operated on for varying degrees of evanosis in an attempt to secure greater pulmonary blood flow No patient, no matter how serious his condition, was denied operation if there seemed to be a remote chance of offering even partial relief. Two patients died We used either the left or the right approach, anastomosing the subclavian artery to the pulmonary artery, usually end to-side but occasionally end to-end with a large branch. We did not perform the procedure bilaterally.

TABLE 4 Pre and post operative cardiac catheterizat on find ngs in pat ents with at ial septal defect

	P pe t		Post p tiv	Int rval	
C numb	R ght w nt icular p ure	Sh at	Rghtv t clar put	Shunt	studes (in moth)
1	25/0 mm Hg	45 L/min	16/2 mm Hg	None	5
2	40/0 mm Hg	4 yst mic fl w	26/7 mm Hg	N	3
3	45/0 mm Hg	42 L/m	23/0 mm Hg	Non	9
4	102/4 mm Hg	29 L/mi	50/0 mm Hg	Ν¤	5

Pulmonary Stenosis In six patients, pulmonary stenosis was attacked directly by the Brock technic¹³ of incision and dilatation. No deaths occurred in this group

Aortic Aneurysm Five patients with aortic aneurysm were operated on Three unruptured abdominal aortic aneurysms were excised by Dr Denton Cooley In all three, the lesion extended to the renal vessels and a "Y" excision was used In the first two an aortic homograft was used, and in the third a nylon cloth graft impregnated with a stiffening plastic. The results in these patients were highly gratifying

In the other two patients, one had a huge abdominal aortic aneurysm which ruptured some hours prior to exploration In spite of all efforts to cross clamp the aorta and replace blood loss, the patient continued to exsanguinate and died The other patient had a thoracic aneurysm Excision of the aneurysm with homograft replacement was followed by partial paralysis of the lower extremities from ischemia of the spinal cord This patient died some months later after a stormy course

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TABLE 5 Ca diovascular p at ons on 103 pat e 1s at B ooke Army liosp tal f om 1950 to 1954—Continued	Total m tality Complic tto R ma ks	t N mbr Prent	100 E plor d only	p wdrd bets P tallgation Co may inus	100 Atr 1s ptal d f ct pl s Blal ck nastomost	100 H fnag l v lve	0 B tile w d	* 0
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105 pat	Lted	N mber		0	-	-	000	
at ons on	de th	P c nt N mber P	100	•	8	85	0000	1,5
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Coronary Artery Disease In two instances patients with myocardial ischemia due to coronary sclerosis were operated on and powdered absests was placed in the pericardial sac to stimulate adhesions with the hope that increased myocardial vascularity would result Both of these patients were improved as evidenced by increased exercise tolerance and decreased anginal pain

Transposition of Great Vessels Two patients were operated on for this serious disorder one died shortly after operation the other some months later in both cases an interatrial septial defect was created plus a Blalock Taussig type of subclavian pulmonary artery anastomosis in an offort to induce greater mixing of blood between the pulmonic and systemic circulations

Actic Insufficiency Two patients in this category were oper ated on for insertion of the llufnagel valve. The first procedure went well the patient left the hospital but died suddenly some months later. Autopsy showed a well healed norta with function ing valve. No cause for death could be ascertained The other operation was an error in judgment because the patient was too lil even to sit in a wheelchair Under refrigeration an attempt was rade to introduce the valve but as the norta was cross clamped the tremendous heart went into arrest and resuscitation failed.

Subacrtic Stenosis Two patients were operated on and were found to have this condition as a part of multiple defects Both died no corrective operative procedure having been attempted

Constrictive Pericarditis In one patient a severe calcified constricting, pericardium was excised successfully. This man baid a very flabby invocardium and although he showed improve ent after operation he was not restored to normal. His perior drum was so thick and hard that rib shears were needed to

Va cular Ring A vascular ring in one patient which surrounded and partially obstructed the esophagus was successfully divided

Foreign Body in the Heart A metallic fragment in the myo-cardium of one patient was easily removed. Recovery was complete

Pulmonary vortic Nindow In one instance a child was oper atod on under refrigeration with a tentative diagnosis of patent ductus or nortic window. There was no patent ductus but a large window at the origin of the acrta was found its diameter was greater than the hipoplastic acrta. The dissection was without event but after the clamps had been applied a tear developed into the right pulmonary artery. Although the shunt was quickly divided and intred and clamps were applied to the area of leak fatal cardiac rest developed.

SUMMARY AND CONCLUSIONS

Close co-operation between those working in cardiology, radiology, and surgery is essential in the working and thorapy of patients with cardiovascular lesions that are amenable to surgical correction

In the period 1950 to 1954, 105 patients in this category have been operated on at this hospital (table 5) with an operative mortality rate of 75 percent, a late mortality rate of 28 percent, and a total mortality rate of 10 3 percent, in spite of the fact that no patient has been refused operation because of the serious ness of the risk

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TPEATMENT OF ULCERATIVE COLITIS

The mortality following surgical treatment of ulcerative colitis will be reduced by a more conservative surgical management by proper selection of time for operation on the part of both internist and surgeon and by proper surgical procedures. A point of particular importance is that these patients must be followed regularly for the duration of their life. It must be impressed upon them that they must report any difficulties with the function of the ileostomy and other abdominal symptoms. It is the responsibility of both the internist and surgeon to maintain an interest in patients with ulcerative colitis, who have been submitted to surgical care, for the remainder of their lives or the patients life.

-- RICHARD B CATTELL M D
In Ame can Journal of Surg ry p 616 Nov 1953

AN ANALYSIS OF PSYCHIATRIC CASE HISTORIES

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DUDLEY H RIFFE L 1 m 1 (MSC) USNR

IN ORDER to describe the kinds of psychiatric patients ad mitted to the neuropsychiatric service of this hospital, such questions as Where do these patients come from? What are they like? What happens to them here? and Where do they go? were considered pertinent A study of such factors not only has unlimited research potentialities but also should assist Naval Psychiatry in evaluating the effectiveness of its over all treatment program and di-position policy and perhaps its role in recruit selection. Then too the results of such a study should be of interest to the behavioral sciences as a whole (particularly in the area of admission symptomatology).

In evaluating these results for possible comparison with other populations two factors which tend to operate against each other must be kept in mind first it must be remembered that service personn I are a elected population in that all had to meet cer tain minimum phy ical educational and mental standards in order to be a limitted into the armed services. In this sense one might safely so fulfite that he and large service personnel are r educated than is a random sample of the civilian po-An argument could perhaps be made that nopulation would be found to suffer from the predifferer ental di orders and differ from the civilian populati vital respects Accordingly one should be caution ling generalizations based on the results of this i conulace at large Second this hospital is the treatfor naval personnel on the East Coast and as si t majority of the nationts it gets are the more seriou c nich could not be disposed of at the lower treatment certer (aboard ships or at dispensaries and local naval ho pital) In other words by the time a patient gets to this ho p tal he is usually at the last step of the treat ment sequence and reads either for discharge or duty Serious ness of psychiatri illin as is the only criterion for admission to this hospital a ti no established naval policy governing selection of patient n any other basis (e.g. of sex rank

FmUS Naval H pul F diphus p

Sex

Of the patients admitted 93 percent were men and 7 percent were women The Bureau of Naval Personnel reported that as of May 1954 the proportion of men to women in the entire naval service was 98 6 percent to 14 percent Statistically these differences vere found to be highly significant in other words our data indicate that women in the naval military service are more likely to incur psychiatric breakdown than are men-proportionate of course to their ratio in the entire service The implications in this finding perhaps bring into focus some ques tions the answers to which affect the over all efficiency of the naval service For example does the screening process of women into the Vavy need re examination? In line with this should not the personality characteristics the motivations and expec tations of women joining the Navy be more critically evaluated? Could more careful classifications and duty assignments con tribute to lowering the high incidence of psychiatric illness in omen? Poes the factor of lowered prestige of women in the peacetime military services play a part and can public relations do anything to increase social acceptance? Further investigation of these problems certainly seems warranted

Marital status

Of the patients admitted 68 percent were single of percent were married and 5 percent were separated or divorced The I. S Census Bureau reports that at the age of 23 (our average admission age) 47 percent of all men in the country in 19 0 were single in our age group consequently there tends to be a larger proportion of single men than in the general population This result appears reasonable and suppests that younger men in the ervice are postponing marriage

Pare

In a distribution of patients by race 88 percent were Cau casian 10 percent were Negro and 2 percent were unclassified (Filipino Puerto Rican et cetera) According to the 19 0 cen sus the followin is the proportion of races in the United States 88 4 percent Caucasian 11 5 percent Vegro and 0 percent other to statistically significant differences were found in the proportion of the two major races in the patient group and the country at large

Peligion

The distribution of patients by religion was as follows 63 5 percent Protestant 33 0 percent Catholic and 3 5 percent Jewish One can roughly compare these figures to those obtained from the Yearbook of American Churches' on the national distribution 58 8 percent Protestant, 32 8 percent Cutholic, 5 4 percent Jew 15h, and 2 9 percent other

It should be kept in mind that the figures on the patients are based on their religion as stated on entrance into service. The national distribution is based on church membership. None of the figures gives any indication of the degree of religious ad herence. In order to correctly evaluate the data on the patients, it would be necessary to know the distribution of religions throughout the entire inval service so as to determine whether or not a disproportionate number of adherents to one religion suffer headdown these data were not available

Education

The average (mean) number of years of education completed was 10.7 years, although the most frequently occurring (mode) level which was reached was 12 years, or high school graduation. The 1950 census' reported that the average number of years of education for the population of the United States in that year was 9.3 years. Thus, this patient population appears better educated on the average, than the general civilian population

RanI

In this group 7 percent were officers, 25 percent were rated enlisted personnel and 68 percent were nonrated enlisted personnel

Statistics obtained from the Bureru of Naval Personnel show the following distribution throughout the Navy and Marine Corps as of May 1954 10 percent officers, and 90 percent enlisted men

These differences were not found to be statistically significant and could have been due to sampling variations

Branch of service

Of the group 74 percent were in the Navy 21 percent in the Marine Corps, and 5 percent in the Air Force

The Bureau of Naval Personnel statistics' show the following distribution for the entire naval service 77 percent Navy and 23 percent Marine Corps

No statistically significant difference was found in these figures which would indicate that either Navy or Marine Corps per sonnel are hospitalized for psychiatric reasons in greater proportion than would be expected from their numerical ratio in the service

L ngth of service

The average length of military service of patients admitted to the Neuropsychiatric Service was 25 months Of all the patients 80 percent had less than 4 years service whereas Bureau of Naval Personnel statistics show that 65 percent of the entire naval service has less than 4 years service. This different was not found to be statistically significant, indicating that the reason the great majority of the patients are those with short service (less than 4 years) is simply due to the fact that the Navy is largely composed of short-service personnel Contrary to expectation those persons who have been in the naval service more than 4 years are proportionately just as likely to become psychiatric casualties as those who have been in a short time

Family constellation

Many investigators have stressed that one of the causative factors in mental illness is faulty identification as a result of the loss of one or both parents at a crucial age. This section provides some data on this point.

At the time of their admission to the sick list 49 percent of our pritent population had parents living together. Accordingly about hilf of all the pittents (51 percent) came from homes which were brolen for one reason or another. Statistics on the national average of broken homes were not available but it is reasonable to assume that these patient figures are higher. Whether broken homes are a factor in the development of rental illness cannot of course be answered conclusively by this data. It appears to be symptomatic of all forms of social disorganization (e.g. delinquency and crime as well as mortal illness). It is interesting to note that of the 49 percent who had prients living together note use made in the records of 18 percent of considerable parental dissension.

At an early age 15 percent of the patients lost their fathers and 10 percent lost their mothers through death At an early age $^{\circ 0}$ percent of the patients were separated from their fathers through leval separation or divorce Two percent vere separated from the father for other reasons (e.g. dosertion commitment to a mental institution et cetera) At an early age 6 percent of the patients were separated from their mothers through legal separation or divorce Four percent were separated from their mothers for other reasons (e.g. commitment to a mental institution desortion illegitimacy)

Up to and including the age of 12 9 percent of the patients were reared by the mother alone and less than 1 percent by the

father alone, 1 percent were reared by a father and stepmother, 5 percent by a mother and stepfather, and 16 percent by other combinations (largely shifting perental figures) An interesting sidelight of this data is that, up to and including the age of 12, 13 percent of the patients were reared by women alone and less than 1 percent by men alone, of whatever combination Conse quently, this seems to lend support to previous evidence that there is, in our culture, greater opportunity for feminine identification than for masculine identification

Twenty two percent of the patients were the oldest child, 27 percent were the youngest child, 37 percent were in the middle, and 14 percent were only children

Previous investigators have propounded many theories around the relationship between psychopythologic conditions and ordinal position in the family. The statistics on the national average of people who were the eldest, youngest, and only children were not taken by the Census Bureau, so there is no way of knowing how these figures compare With reference to the category of "only children" there are some workers in the field who maintain that being an "only" child makes one more susceptible to mental illness (because of such factors as overprotection, inadequate learning of social skills, ot cetera) Others maintain, however, that the problems of sibling rivalry are more difficult for children to cope with than are the problems which "only" children un oncumbered by sibling jealousies, have to face The data pre sented here does not suggest that an undue number of only" children were admitted

Disciplinary record

Of the patients admitted to this hospital, 26 5 percent had disciplinary charges in their record (t ϵ mention was made in the case history other of a violation occurring in the past or of one on which charges vere pending)

Source of admission

Following are the immediate sources from which all of the psychiatric patients were admitted to the neuropsychiatric service

Of the group, 72 5 percent were transferred from another hos pital the most frequent source of our admissions. Of the remain ing patients 17 percent were transferred directly from dispensaries 55 percent were admitted directly to this hospital (e.g. hospital staff personnel and those brought in by military police from liberty), 2 percent were transferred directly from a ship 1 percent were transferred from the brig, 0.5 percent were transferred directly from overseas hospital, 0.5 percent were

transferred from other hospitals to the modical service of this bospital before coming on the neuropsychiatric service 0.5 percept were transferred from a dispensary to the modical service of this hospital before coming on the neuropsychiatric service and 0.5 percept were transferred from a ship to a dispensary and then to this service.

Breaking down the data in another and perhaps more meaningful way are the following categorie. Thirty eight percent of the patients became ill while on shipboard dut. It is impossible to state precisely what proportion of these patients were on over seas shipboard duty and what proportion were on stateside shipboard duty although the latter were in the great majority. At least 16 percent of the patients admitted to this service origin ally broke down overseas Of these 9.5 percent were on overseas shore duty and about 7 percent were on overseas shore duty and about 7 percent were on overseas we cannot determine whether any of the patients admitted from stateside ships became ill while the ships were returning from overseas.) Tive percent of the patients were admitted from the brig. This figure is larger than the brig figure reported previously because the majority of these patients, stopped at other installations on their way to this hospital.

Disposition

Of the patients 39 percent were discharged to their homes porcent were discharged to a Veterans Administration hos pital 14 percent were sent back to duty (12 percent to full duty and 2 percent to limited duty) 15 percent were sent back to dut for completion of disciplinary action and 7 percent were returned to the marine barracks (Of this last group 3 percent were returned for discharge 3 percent for orders and eathed leave 05 percent to await return to duty and 05 percent for limited duty with discharge recommended) All of the Air Force personnel (2 percent of the patient population) were returned to Air Force jurisdiction with a recommendation for discharge (Vote Tie Navy does not make final disposition of Air Force personnel and can only recommend disposition).

Treatment

The treatment given patients on this service could only be grouped in rough fashion For example p yehotherapy could include not only systematic and intensive psychotherapeutic interviews on a regular basis but more casual contacts as well Be cause of the ambiguity of the term and the lack of systematic information in the records there is no breakdown of this cate got. This should not be interpreted to mean that psychotherapy was not practiced on the contrary there was some evidence

to indicate that quite a bit was going on In the following cate gories, the treatment the patient received both prior to admission to this service and while on this service is noted Of the patient population, 155 percent received electroconvulsive therapy, 25 percent, prior to coming here and 13 percent, here Six percent of the patients received insulin shock therapy, less than 1 per cent, prior to coming here and 55 percent, here Eighty percent of the patients received nonspecific treatment

Length of hospitalization

The average length of hospitalization for all patients on this service was 61 days Patients on the average spent 17 days at another installation immediately prior to admission here. Consequently, the total length of hospitalization for the average patient was 84 days.

Diagnoses

Incoming and outgoing diagnoses in the major psychiatric cate gories are shown in table $\mathbf{1}$

a Psychotic disorders

TABLE 1 Incoming and outgoing diagnoses in the major psychiatric categories

Diagnostic categories	Incoming diagnoses (percent)	Outgoing diagnoses (percent)
Psychotic	60 0	46 0
Psy honeurotic	165	13 5
Charact r disorders	90	36 5
Other	14 5	40

Of all patients admitted with a psychotic diagnosis, the following dispositions were made 72 0 percent retained a psychotic diagnosis, in 21 5 percent the diagnosis was changed to that of character disorder in 5 7 percent to psychoneurosis and in 0 8 percent to psychiatric observation

The changes in diagnosis among psychotic disorders are noted in table $2\,$

b Psychoneurotic disorders

Of all patients admitted with a psychoneurotic diagnosis, the following dispositions were made 37 0 percent retained a psy choneurotic diagnosis, in 57 0 percent the diagnosis was changed to that of character disorder, and in 6 0 percent to a psychosis

The changes in diagnosis among psychoneurotic disorders are noted in table 3

Character and behavior disorders

Of all patients admitted with a character and behavior disorder diagnosis the following dispositions were made 760 per

TABLE 2 Incom g doutgo gpyhicdiag os

Py hot disord	l om g d gn (pe t)	(pe t)
(Schi ph II type)	(55 0)	(43 5)
Schu ophr is para d type Schuz phre n. S h oph i tat type S h ph mpl type P y h d p re on Schuz phr is lat at typ S ch ph is h beph type A d pre P ra od tat	26 0 14 0 6 0 5 0 4 0 2 0 1 5 1 0	22 0 12 0 4 0 4 0 1 5 1 5

N I who is fd

TABLE 3 1 m g nd tg gpy hon t diag os

Psy hon uror diagn	f m g (pere t)	Outg g diagn (perc t)
Anx ty t t	5.5	4.5
Nurudperecu	50	3.5
C on th	2.5	20
D ocia i ton	1 10	0.5
Pyhge m lkltl	1	1
t -	10	1.5
Ob ~cmpls on	0.5	1 15
Pyhgck ret	0.5	1
Ph b	0.5	ì

cent retained a character and behavior disorder diagnosis in 12 0 percent the diagnosis was changed to that of psychiatric observation in 6 0 percent to a psychosis and in 6 0 percent to a psychosis and in 6 0 percent to

The changes in diagnosis among character and behavior discretes are noted in table 4

Nithough only 90 percent of all patients were admitted with character and behavior disorder diagnoses 365 percent were discharged with that type of diagnosis. One possible explanation for this finding is that some of these patients essentially re-

covered from a brief, acute psychotic breakdown and exhibited the basically defective character which predisposed them to react to stress with psychopathologic symptoms (so-called "ads schizophrenia") Another possible explanation is that these patients were misdiagnosed as psychotic at previous installations because of an insufficient period of observation and the exigen cies of the examining situation

TABLE 4 Incoming and outgoing character and behavior disorders

Character and behavior disorders	Incoming disgnoses (percent)	Outgoing diagnoses (percent)
Emotional instability reaction	20	90
Passive aggressive reaction	15	3 0
Schizoid personality	15	4.5
Passive dependency reaction	10	80
Addiction	10	0.5
P ranoid personality	0.5	10
Immaturity with symptomatic habit	1	ı
teaction	0.5	ì
Inadequate personality	0.5	60
Alcoholism	0.5	1
Antisocial personality	1	15
Aggressive reaction	1	15
Cyclothymic personality	1	0.5
Specific learning defect	ì) 05
Acute situational maladjustment	1	0.5

d Other

Of all patients, 14 5 percent were admitted with diagnoses other than psychiatric They are classified as follows 70 per cent were admitted for psychiatric observation 6 5 percent were admitted with miscellaneous diagnoses (primarily physical disorders), and 10 percent were admitted with diagnosis undeter mined without a tentative diagnosis Four percent of all patients were discharged as follows 20 percent for psychiatric observation, 15 percent for miscellaneous reasons (usually physical disorders) and 05 percent for medical or surgical observation

Symptoms

9 0

Table 5 presents a fairly exhaustive inventory of the symptoms that patients tend to have when they are hospitalized for psy chiatric reasons. The figures in the columns refer to the per centage of patients who had any particular symptom, obviously, each patient had more than one symptom. A comparison is made between the frequency of symptoms on admission to the sick list and on admission to this hospital.

TABLE 5 P tag add ffque cy fympt m a p ent dup t ladm t th kl t da t d t th bosp t l

Symp m		∖ dpr usly N ed b		
	Ord	P	P	0 4
Sp flinfle d para	١.		20.0	Π.
	1 2	33 0 24 0	29 0 19 5	6
Hil nations Flat ppr pust ff	3	23 0	29 0	1 2
P ple d fus d mix d p	4	22 5	15 5	7
Tns tv axou wrr d	٦.	~~ ′ .	*′′	1 '
f f1	5	22 0	300	1
Whdraw is lated f d	6	200	22 5	4
Dp dd p a	7	155	22 5	5
D lus on	8	150	90	13
Bod ly ompla ts (hypochond tacal	J	J :	J	J
mat nalympmsrvs m.hflddsmatd	l	1	i	l
	1 _	1		١.
l flomathge) Bizarr dea	10	15 0 14 0	14 0 10 0	10
Dogatzdrag Inchret	lii	100	90	111
Su d 1 ttempt	îŝ	95	20	32
H d h	îã	90	5.5	16
Dkg	14	80	2 5 6 0	26
Rig p oc pa	15	80	60	15
Self-d p cary dea	16	7.5	85	14
Em I bur t mpe bur ts	17	70	1.5	35
Hypera ty I p daptabl	18	65	3 0	24
Ip daptabl Sdld	19	65	12 0	22
Th lt	21	60	33	27
Ā 1	22	55	3 5 2 5 5 0	17
S lpeocpt	23	50	125	28
I mnia	24	50	4.5	18
I lpe td tr bld by dea of		i !	l	ļ
hom runlty	25	40	20	33
Blak fatg pell	26	40	0.5	41
Pyh mat dad (g thm		1 8		
hype te l ll gy o- d ma tis)				21
D urbed ted d rue	27	3.5	3.5	21
m ia llk bu	28	3.5	0.5	42
E ph hyp ma lated	29	1 35 1	45	19
Apath c l l gy	-/			,
ly fatigu d	30	3.5	90	12
Doe (or 13)	31	3.5	10	38
V baldf fow h s 1 mpul	32	3.5	10	39
Srutt g	33	3.5	2 5	30
Flgs flnadq cy	34	3 0 3 0	2 Ś 1 Ś	29
Vod w gs Depe naliza n f l s funre l rv	35	30	20	36 34
	36 37	52	30	25
H lpl d ling g	38	5 5	35	23
Cmp 1 n.s	39	2 5	15	37
Phtry lay br kigd g	40	25 25 25 25 25		
1 00 17 / GL KL B U B I				

TABLE 5 Percentage and o der of frequency of symptoms as p esented upon nitial admissior to the sick list and as noted at it is bospital —Continued

Sympt ms	Ntd	N t d previusly		Not dhe	
	1 b 0	Pcet	Perc t	Ord	
Irruable hostile	41	2 0	2 5	31	
Amnesia	42	2 0	0 5	43	
Phobias	43	15	0.5	44	
Passive obstruction pouting stubborness Flight of ideas	44	15 10	40	20	
Narcotic addiction	46	10	0.5	45	
Homosexuality (acting out)	47	10	0.5	46	
Feels going crazy	48	0.5	1)	}	
Overeats	49	0.5			
Ties	50	0.5	10	1 40	
Lying	51	0.5	1	1	
Accused of rape incest seduction	52	0.5	0 5	47	
Fire setting	53	0.5	li .	1	
Mutism	54	0.5	0.5	48	
Enuresi	55	0.5	0.5	49	
Waxy flexibility	56	0.5	1	1	

Thi list was b d a li compled by th Py hology Dpa to tf the W c t Stat H pt lth ugh th c urt sy f Dr L le Phill ps Ch f Pych logist.

SUMMARY

In this study an analysis was made of the characteristics of patients who passed through the neuropsychiatric service of a large naval hospital A random sample of 200 case history sum maries was selected from among 1691 patients discharged in 1953 and the following data were collected age sex marital status race religion, education, rank, branch of service average length of service family constellation, disciplinary record, source of admission length of hospitalization incoming diag nosis, change of diagnosis, and final diagnosis, disposition, type of treatment admitting symptoms, and symptoms while on this service Using certain relevant factors as criteria, comparisons were made between this military patient population and the civilian population of the country as a whole

CONCLUSIONS

A study such as this, it seems to us should be the precursor of any planned research program using human subjects in large numbers. Until the researcher knows the kind of population with which he is dealing he will be unable to plan a research program intelligently.

Collection of a series of actuarial studies like this one through out all psychiatric installations of the military services should

bring into closer focus the characteristics of service personnel who incur psychiatric breakdown (for example our finding that women in the naval imilitary service incur psychiatric breakdown significantly more often than is proportionate to their numbers in the service leads to a potentially fruitful area of investigation) Knowledge of these characteristics and their rofinement through further research should be of assistance to those who deal with the problem of psychiatric screening Prediction of behavior is the weakest of all the functions of the behavioral sciences but more accurate information on the characteristics of psychiatric casualties might help in initially eliminating those who are likely to break down later.

The main function of this hospital of course is treatment and care of the psychiatrically ill so that they can either return to duty or be returned to civilian life in the best possible state of health. This research should be of assistance to psychiatric services of all military hospitals not only in planning future treatment programs but also in the selection of treatment person nol in organizing the physical plant and in other administrative decisions.

Consideration of the more theoretic implications of some of our results is perhaps in order A possibly significant sociocultural trend is reflected in the finding that a large preponder ance of patients who are not psychotic are discharged from this major neuropsychiatric center with character and behavior di orders. In most cases the psychotic patients also are found to have prominent patholo_ic character traits While it is a truism that everyone has a character patently all people do not have lifelong adjustment difficulties with society Our data however suggest that these character defects these basic personality maldevelopments are more prevalent than had been heretofore believed Admittedly there are certain practical dispositional reasons which in some cases lead naval psychiatrists to estab lish these diagnoses, and in many civilian clinics the neurotic features may be emphasized in establishing diagnoses the ques tion seems to revolve about the nosologic issue of diagnosing on the basis of symptoms dynamics or development Despite the fact that psychiatric textbooks devote relatively little space to these problems and expand at length on the neuroses the facts of the matter are insofar as this installation is concerned that neurotic illness in pure culture is exceedingly rare. Indeed we wonder how many true neurotics of the ideally analyzable type uncontaminated by defects of character are actually seen in any private practice or outpatient clinic There are more ques tions raised than answered by this finding—viz are the dis orders of character in our society more pervasive than they used to be? Are we simply becoming more aware of the character and

behavior disorder? Are we belatedly recognizing that the super ficial symptom picture is of relatively minor importance in, say, determining the outcome of the illness? In relation to this latter question, for example, anxiety, the most frequent symptom on admission to this hospital, is exhibited or expressed by patients of all degrees and kinds of psychiatric illness, and is frequently used as a gauge of prognosis, the more elusive concept of maturity, on the other hand, may be of more crucial prognostic relevance Part of the difficults with this whole question is that a character disorder may have protean manifestations ranging from clinging dependency through social inadequacy to drug ad diction or assaultive acting out.

The answers to these questions, of course, can only be provided by future research. The most potentially fruitful area of study, it would seem, would be isolation from the early develop mental years of the variables that predispose one person toward a psychosis, another toward a neurosis, another toward a disorder of character or behavior, and another toward "normality"

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ACKNO% LEDGMENT % e are indebted to Captain John F. McMullin Chief of Neurop ych atry U. S. Nayal Hospital Philadelphia Pa for having provid d the or ginal idea and innectus for this study

THE MAD ENGLISHMAN

There were many unimportant aspects of American Army hospital life that were strange to me the visiting Englishman. I was never able to comprehend not could anyone inform me why it was that winter and summer all windows were half covered with blinds to exclude the sun and the light while all the artificial lighting blazed. I made occasional attempts to let in the light and the air but soon had to desist. My American friends pulled my leg about it I was the mad Englishman who en joyed fresh air and playing games and walking for pleasure.

—KEMBLE GREENWOOD Maj RAMC in Journal of Royal Army Medical Corps p 313 Oct 1954

PORTAL VENOGRAPHY

ROBERT L RUDOLPH M + USAF (MC)

ATTENTION has been focused on vasography in the evaluation of diseases of the liver and spleen in the past 10 years due chiefly to the advances in vascular surgery in the treatment of portal hypertension Radiopaque media are injected into the portal circulation by various routes for roentgenographic visualization. These injections have been made into the superior mesen teric vein splenic vein right gastroepiploic vein and a branch of the coronary vein. The sequelae of these procodures are minimal however. Walker and associates reported a case in which splenic injection of diodone (brand of diethanolamine salt of 3 5 diiodo-4 pyridone-N acetic acidy at laparatomy resulted in a delayed hemorrhage requiring reoperation and splenectomy. A number of reports have appeared in recent years describing portal venography by different technics.

In 1951 Leger and associates working in Paris produced one of the first portal venograms by percutaneous splenic injection. This work along with that of Abeatici and Campi. Who injected joduron (an organic todine contrast medium) into the spleens of dogs stimulated widespread interest in the procedure and subsequently several reports on the subject have appeared in the English literature.

Percutaneous splenic portal venography was performed on 15 patients with a variety of clinical entities operative portal venograms were made of 4 additional patients. Some of these experiences will be considered in detail.

ANATOMY

A precise understanding of the anatomy of the extrahepatic por tal circulation is necessary for the proper evaluation of portal venograms. The arrangement most commonly found by Douglass and associates in their study of 92 autopsy specimens is reproduced in figure 1

From C y H p s l f Akron Akr O Ba Mah R d lph ow gued U S A F H p l, S lf dg A F Ba Mah S p l us p ture h wa we pro dur V d l p babby dud th f p l as p ture h wa the cetury i th dign fryph d i Th p edute wa d p ted wid by Europ d A f b d g na s i fur p l p as f ture a d p ted wid by Europ d A f b d g na s i fur p l p as f ture b by ted Sut i

Another anatomic factor to be recalled is the natural communications existing between the portal and caval venous systems Under normal conditions these inosculations seldom function and each system is physiologically separate. These communications are of great importance in certain pathologic conditions, which result in hypertension in either the portal or caval system. The direction of the venous blood may reverse with flow from one system to the other, with subsequent dilatation of the communication as exemplified in the Cruveilhier Baumgarten syndrome.

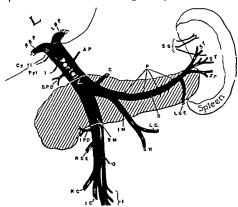
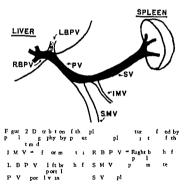


Figure 1 The extrahepatic portal syst m of veins anterior aspect.

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A P = ccessory pancreatic v
                               P = pancie tic v ins
C " coronary vein
                               Pyloric = pylo ic vein
Cyst c = cystic vein
                               R B P = right branch of
I "intestinal v ns
                                         po tal v in
I C = leocolic vein
                               R C = right colic vein
I M = inf rior mesenteric v
                               R G E = right gastroepiploic
I P D = nf rior pancreatico-
         duodenal vein
                               S = splenic vein
L = liver
                               S G short gastric veins
L B P = 1 ft branch of portal
                               S H = superior hemorrhoidal v
                               S M = super or mesenteric vein
L C. = left col c ve n
                               S P D = superio paner atico-
L G E = 1 ft g stroepiplo c v
                                        d odenal vein
O " omental vein
                               S T = spl nic trunks
(Reproduced with permi sion from Douglas B E Baggenstos
A H and Hollinsh d, W H Variations in portal sy tem of
veins Proc Staff M et. Mayo Clin 25 26-31 J n 18 1950)
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PHYSIOLOGIC CONSIDERATIONS

Some interesting observations are made by portal venography concerning portal and splenic physiology. The theory of bilateriality of or streamline portal blood flow was advocated by Copher and Dick and Hahn and associates who postulated that blood from the spleen stomach and greater part of the colon goes to the left lobe of the liver whereas blood from the duodenum head of the pancreas and small intestine is returned to the right lobe of the liver This is not substantiated by the contigenograph ic findings followin, portal venography by splenic injection. On the contrary there is more complete filling of the right branch of the portal ven after splenic injection (fig. 2)



The almost instantaneous emptying of the injected media from the spleen lends strong support to Macfenzie and co-workers inconception of an open splenic circulation. The contraction of the spleen from the stimulation of the needle puncture may also be a factor in the rapid emptying. The exact manner of connection of the arterioles and venules however remains vague

TECHNIC OF PERCUTANEOUS SPLENIC FORTAL VENOGRAPHY

The procedure used in this series for splenic puncture and por tal venography is simple. A complete blood cell count bleeding time, clotting time, and prothrombin time determinations, and a skin sensitivity test to the opaque media are done. If the use of general anesthesia is contemplated, the patient is fasted and treated preoperatively with morphine and atropine. If local anes thesia is to be used, the patient receives 180 mg (3 grains) of pentobarbital sodium. I hour before the procedure to counteract any reactions to the procaine hydrochloride and to alleviate apprehension.

The patient is placed in a supine position on a radiographic table with sandbags under the left hip and shoulder to live the body an angle of 15 to 20 degrees A preliminary roentgenogram of the abdomen is taken to test the roentgenographic technic and, when possible, to locate the splenic shadow The skin is washed with pHisodern and painted with aqueous zephiran (brand of benz alkonium chloride) Aseptic precautions are taken throughout the procedure The splenic puncture is accomplished using a 3 inch, 18 gau e spinal needle introduced in the ninth left interspace at the level of the nosterior axillary line. Inserting the needle into the spleen at the end of inspiration avoids the hazard of the sud den reflex descent of the diaphragm when the needle penetrates the peritoneum, the so-called von Nagy roflex 20 A characteristic rubbery type of resistance is encountered as the needle enters the spleen Blood can usually be aspirated without difficulty. It has been impossible to control respirations satisfactorily for the nec essary period of time except when general anesthesia is used With local anesthesia, the patient is instructed to breathe as quietly as possible and avoid coughing Extreme care is exercised not to traumatize the spleen during the excursions

Ten to 20 ml of either 35 percent or 70 percent urokon (brand of sodium acetrzoate) or diodrast (brand of lodopyracet) is introduced within 3 seconds, and a roentgenogram taken at the comple tion of the injection Following the injection, the needle is quickly withdrawn and the patient returned to his room, where careful observations are made for hemorrhage. The patient remains-flat in bed for at least 6 hours.

INDICATIONS

Although the full potentialities of portal venography have not yet been exploited, the procedure will undoubtedly continue to be used for the preoperative evaluation of patients with clinical por tal hypertension by differentiating intrahepatic and extrahepatic blocks of the portal circulation it will give the surgeon insight as to the status of the great veins of the portal system and will enable him to better plan his surgical procedure preoperatively. The patency of a previous portacaval anastomosis can be conclusively demonstrated Portal phlebography may aid in the evaluation of the portal phlebography may aid in the evaluation of the process of the portal phlebography may aid in the evaluation of the process of the portal phlebography may aid in the evaluation of the process of the portal phlebography may aid in the evaluation of the process of the portal phlebography may aid in the evaluation of the process of the portal phlebography may aid in the evaluation of the process of the portal phlebography may aid in the evaluation of the process of the portal phlebography may aid in the evaluation of the process of the portal phlebography may aid in the evaluation of the process of the portal phlebography may aid in the evaluation of the process of the portal phlebography may aid in the evaluation of the process of the portal phlebography may aid in the evaluation of the process of the proces

Case 5 A 75 year old white man came to the hospital because of upper abdominal pain. The pain first appeared 4 months prior t admission and was severe con tant and localized in the right upper quadrant of the abdomen Associated with the attack were chills fever a f inticterus dark wine and light-colored stools. The first attack lasted 1 dp ut 2 similar attacks lingered for about 1 week. The patient complained only of obstipation between these attacks.

The past medical history included a cerebrovascular accident with a tight hemipleg in 1949. There was a residual spastic paralysis of the right upper extremity recovery being otherwise complete.

There was a faint scleral icterus. The abdomen was soft and flat and the liver edge was palpable 2 cm below the right costal margin. The different rect reacting serum bilitubin was 2 2 mg per 100 ml and tot 1 bilirubin was 45 mg per 100 ml. A cholecystogram revealed a nonlinet oning gallbladder with no evidence of radiopaque calculi. Gastrointestinal recenteen study was noncontributory.

Portal venography under loc l procaine and intravenous pentothal a esthesia was performed usi g 15 ml of 35 percent diodrast for the inject on (fig 8) "he po tvenography cours was uneventful Six days later the pat ent was returned to the operating room where a cholecys tectomy and choledochostomy was performed for the removal of calculi At th time of the lap it tomy there was no evidence of intraperito eal blood as a result of the previo s splenic puncture but there were soft filmy adhe ons between the diaphragm and the convex s frace of the spleen

The convalescent period ws uneventful A cholang ogram on the sixth day was normal and the patient has been symptomatic to dat. The final diagnos s was chronic purule t and ulcerative cholecystiti and cholel thus is

Case 6. A 78-year old white m n was admitted to the hospit I with the provious I diagnosis of leukemia For the past 6 weeks he had noticed a painful lump in the left upper abd men. The patient complined of asy fatig bility anorex weakn ss and shortness of breath on mid exertion

The physical finding on admission revealed submaxillary posterior auricular cervical and ax llary lymphaden pathy. The sple news spalpated; the left upper quadrant of the abdom n and was greatly en larged. The list edge was palpable three fing streadths below the right co tall margin. There was shorts; inguinal lymphadenopathy.

The pertunent labor tory finding were a white blood cell count of 360 000 predominantly prinature myellog nous cell and marked a em. The bleeding and clitting times were norm!

Roentgenographic studies of the bowel howed a soft tissue mas in the area of the spleen and d riculo of the sigm id colon. The

patient received 4 pints of whole blood and was started on deep roent gen therapy to the spleen

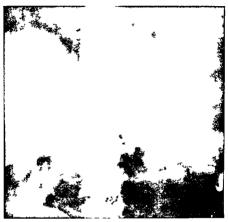


Figure 8 (case 5) Po tal venogram The nearly straight, bonzontal course of the splente and portal veins is traistual. The e is no v s ble filling of the left b anch of the po tal vein. Basium remains in the colon from the basium enema given 4 days previously

After being skin tested to diodrast portal venography was performed using the standard method. Twenty milliliters of 70 percent diodrast was injected into the spleen. Local I percent procaine hydrochloride anesthesia was used in the skin and pentothal sodium was given intra venously to control respirations (fig. 9). The patient returned to his room awake and with a blood pressure of 140/68 mm. Hg. At that time he had no complaints.

A short time later the patient was found lying on the floor in a semi conscious state. He was immediately put to bed and an intravenous infusion of dextrose in water was started. The blood pressure at that 1312

time w s 100/50 mm. Hg the same as at the time of admission His sensor um pr mptly cl ard About midnight the patient beg n com pl in ng of bdominal pain and nause and soon thereafter he vomitted bright red blood and coffee ground material Bl od studies at this time were as foll w 3 m llion erythrocytes per cu mm hemoglobin 49 per cent of normal pl t let count 210 000 per cu. mm bleed ng time 3 minutes and 25 second cl tt ng time 2 minutes and 27 ec nd



Fgur 9 (a 6) P tal ve g m how g the splen ve 1 b f male x Th d mete f th portal cre d and th l ft b n b vi uul zed Th bug pl en mad the plen p 1 t h lly a y 1 a mol h

A blood tran fu on w started and a Se_stak n Blakemore esoph ge 1 tampo tube was 1 se ted Afre 3 pints of whole blo d the blood court 10800 h ur the net morning was a red c ll count f 3 64 mill n per cu mm and a hem gl b n 55 p reent of no mal Two hour let ret be pt nt pul e became t pid and thready and the abdomen became distend d N dl aspir tion of the pert l cavity yielded bright r d blood Th d gnoss of ruprute of the plen was m de B fore the patient could be n v d t th operating o m he died The red blood cell count mmediately before death w s 2 74 ml ll on per cu. mm

The final pathologic diagnosis at postmottem examination was Rupture of the spleen (3 mm) with hemorrhage into the peritoneal cavity, estimated at 1500 ml esophageal varices with perforation and hemorrhage leukemic ulcerations of the stomach with hemorrhage and chronic myeloid leukemia. There was a 4 cm infarcted area at the site of the needle puncture and the bleeding into the peritoneal cavity had been through a small 3 mm rent in the splenic capsule made by the needle puncture

It is believed that infarction of the spleen can be minimized by the use of 35 percent urokon or diodrast rather than the 70 per cent preparation. It is impossible to say what part the venography played in precipitating the hemorrhage from the esophageal varices and gastric ulcerations, but the procedure undoubtedly hastened the fatal outcome

Limitations of space preclude the detailed description of the other cases

COMMENT ON OPERATIVE PORTAL VENOGRAPHY

A factor of safety is added by performing portal venography at the time of laparotomy I have used the spleen, omental veins, and branches of the inferior mesenteric vein for injection. By this technic the danger of hemorrhage is minimized because the vessel can be observed for bleeding and can be ligated if neces sary. This technic is preferred if exploratory laparotomy is contemplated.

CONCLUSIONS

In this article the history, indications, and contraindications of portal venography are discussed. The technic is described and typical venograms presented

Portal venography by percutaneous splenic injection must be considered a calculated risk. The greatest hazard is hemorrhage However portal venography performed at the time of laparotomy is a safe and rewarding procedure. Portal venography should not be performed on patients who have a blood dyscrasia.

To lessen the danger of infarction of the spleen, percutaneous portal venography is preferably done with 35 percent urokon or diodrast rather than with the 70 percent preparations

The streamline* theory of portal blood flow does not hold true according to observations obtained by portal venograms made by percutaneous splenic injection

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Someone has aid A co cl sion is the place where you g t ti d think ng - Martin T Fi che

CARBON MONOXIDE ASPHYXIA

WILLIAM D CLAUDY Major USAF (MC)

F ALL the gases causing accidental poisoning in time of peace, the most important is carbon monoxide. To any practicing physician, a knowledge of the physiology and pathology of carbon monoxide asphyxia is imperative, if lives are to be saved. The military physician must have an even more exhaustive knowledge of the subject, for not only must he treat the victims of such poisoning but he is frequently called on for consultative advice in the fields of prevention and personnel protection. He must have knowledge of the common sources of such poisoning within the military installation in which he services. This includes not only the common hazards of every day life, but the industrial hazards present within his particular facility, the protective as well as the therapeutic requirements of military fire departments, and the particular carbon monoxide hazards inherent in specialized branches of the services.

Many physicians now entering the military service come from civilian practice where these questions are seldom encountered Others come directly from internship or residency, where they may have had brief encounters with the treatment of patients with carbon monoxide poisoning, but have little or no knowledge of the preventive medicine aspect of the condition Some of these physicians will serve in isolated bases, often outside of the limits of the continental United States, where this information is difficult to obtain it is to this group in particular that this article is addressed to attempt will be made to cover the highly specialized problems which may arise in the course of flight, marine or submarine activity, or military activities in connection with the conduct of hostilities

CARBON MONOVIDE CHEMICAL ASPHYVIANT

Carbon monoxide is generally described as an odorless and tasteless gas, though it actually has a slight garliclike odor, which is slightly lighter than air. It is formed wherever the combustion of carbonaceous materials occurs. It falls in the class of chemical asphyxiants which also includes the cyanides.

Asphyxiants generally can be divided into two classes simple asphyxiants (such as nitrogen, carbon dioxide, and other non

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toxic gases) and chemical asphyxiants. The latter can in turn be divided as to their site of action. Carbon monovide causes asphyxiation by combining with the hemoglobin of the blood thus preventing the transport of oxygen from the langs to the tissues whereas evanied derivatives by combining with cytochrome of body cells prevent their utilization of the oxygen brought to them.

AFFINITY OF HEMOGLOBIN

The affinity of hemoglobin for carbon monoxide is from 250 to 300 times as great as it is for oxygen. Thus relatively small quantities of carbon monoxide even when prosent in an atmosphere which is adequate in oxygen may produce effects which may be fatal in a short time.

Carbon monovide acts predominantly by forming a chemical combination with the hemoglobin of crythrocytes. All other immediate and remote effects of gassing are due to the resulting asphyria. This asphyria differs from that caused by simple suffocation because the presence of the carbovyhemoglobin radical in the blood in addition to provonting the transport of oxygen by the involved hemoglobin molecules also interferes with the dissociation of the remaining oxyhemoglobin (to oxygen and reduced hemoglobin) so that even the oxygen absorbed is less readily available to the body tissues than it would normally be Further under normal conditions reduced hemoglobin acts as a catalyst for the liberation of carbon dioxide if there is a do crease in the amount of available oxyhemoglobin (due to its con version to carbovyhemoglobin) the removal of carbon dioxide may be hindered

COMBUSTION AND SMOKE POISONING

A common asphyxial accident due to carbon monoxide is smoke poisoning from accidental building fires. The militarty physician may be called on to treat both building occupants and firemen He may have to direct and supplement the activities of lay rescue squads. Hence a knowledge of the physical and chemical occur rences within burning structures is necessary.

During the combustion of ordinary everyday household materials various amounts of carbon monoxide are formed. The amounts depond on several variables. These are the amount and type of material involved in combustion the amount of oxygen available and the temperature. Some idea of the amounts of carbon monoxide eliminated by the combustion of various substances may be gained by studying table 1. These figures represent total a given atmosphere. Thus the smouldering burning of a small

pile of newspapers in a large open hall would give an entirely different concentration of carbon monovide and diovide within the atmosphere than if burning in a small enclosed basement.

TABLE 1 Percentage of carbon monoxide and carbon dio. ide produced by combustion

Material	Excess oxygen	Limited oxygen
₹ ood	1 9" CO 7 6" CO ₂	2 7°° 5 7°°
Newspapers	6 4° CO 6 6° CO ₂	41 0° (plus low temperatures 43 0° as when smouldering)
Rubber	10 1" CO 20 1" CO ₂	
Wool and silk	6 8" CO 13 4" CO ₂	17 77 CO 33 1° CO ₂

Nevertheless, the percentage of carbon monoxide to be expocted during the progress of any extensive structural fire is considerable, and has been estimated as high as 6 percent ² I have secured determinations ranging from 2 to 4 percent from the smoke of building fires in the same room in which firemen were engaged in extinguishment ³

USUAL CANISTER TYPE MASK INADEQUATE

In the extensive literature on the hazards of carbon monoxide poisoning, most work deals with dangerous accumulations of far less than 1 percent Canister type masks commonly used by fire departments are designed for atmospheres in which the car bon monoxide content does not exceed 2 percent. It would seem that the practical firemen and the engineers designing some of their protective equipment have yet to establish a common goal

Carbon monoxide has a density of 0 967 as compared to air and is therefore slightly lighter than air. When heated, it is con siderably lighter Fire fighters are familiar with the fact that the hot gases of combustion automatically seek the highest level I have repeatedly demonstrated by fireground measurements that concentrations in burning structures where firemen are actually working may reach dangerous levels in the areas from 6 to 12 inches below the ceiling, in stair wells and in attics and cock lofts, where no actual fire exists, and yet the atmosphere in the remainder of the building be entirely safe for unmasked men for considerable periods of time. All fireground ventilation practices are based on this principle.

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During the combustion of ordinary everyday household materials various amounts of carbon monoxide are formed The amounts depend on several variables. These are the amount and type of material involved in combustion the amount of oxygen available, and the temperature Some idea of the amounts of carbon monoxide eliminated by the combustion of various substances may be gained by studying table 1. These figures represent total percentages of gases evolved and not the volume percent in a given atmosphere. Thus the smouldering burning of a small

as exertion, depth of respiration, excitement, fear, pre existing anemia or other factors affecting general bodily vigor, and altitude (partial pressure of oxygen) in a series of self experiments Haldane's showed that the effects are most marked on the central nervous system After preliminary symptoms of nausea, headache, dizziness, confusion, and abdominal pains, he passed into a condition like that of acute alcoholism in which his judgment was lost, but he was unable to realize that his mind was not as clear as ever

TABLE 3

Percent of carboxybemoglobin	Effects
10	No appreciable effect except shortness of breath on vigorous muscular exertion
20	No appreciable effect in most instances except shortness of breath even on moderate exertion occasionally slight headache
30	Decided headache irritability easy fatigability disturbed judgment short ness of breath
40 50	Headache confusion collapse and faint ing on exertion
60 70	Unconsciousness respiratory failure and death if exposure is long continued
80	Rapidly faral
Over 80	Immediately fatal

This is a matter of considerable importance on the scene of an asphyxial accident, particularly when the casualties are multiple Unless careful observation and control of victims who have been treated for carbon monoxide asphyxia is maintained, they may insist on returning to the dangerous atmosphere to attempt the rescue of loved ones, or perhaps to secure personal valuables. This applies to firemen as well as to ordinary victims of asphyxia Indeed, the compulsion and excitement may be so great that the erstwhile patient will actually struggle with his rescuers. I have been struck in the face and cursed by a fireman whom I attempted to prevent returning to a fireswept building after he had partially recovered from the effects of carbon monoxide inhalation. Later, he assured me that he had little recollection of his behavior which was quite out of line with his usual reasonable and agree able character.

It is also readily apparent, that if consciousness is regained when there is still a high (30 to 45 percent) concentration of carboxyhemoglobin in the blood, not only will judgment be faulty,

but strength will be impaired and it will take only a relatively minor re exposure to the gas to bring a speedy return of uncon sciousness in fire departments where morale is high firemen pride themselves on their ability to take it "to eat smoke under tough and dangerous conditions, little realizing that their attitude will jeopardize not only their own lives, but that of their fellows who may be called on to attempt their rescue

The anoxemia induced by carbon monoxide does not cease as soon as fresh air or oxygen is inhaled as is the case with the simple asphyxiants such as carbon dioxide but persist for a considerable period in diminishing degree until all of the gas has been eliminated from the blood Even with the simple as phyxiants the after effects of anoxemia headache disturbed judgment, and impairment of other bodily functions persist for some time after ample oxygen is restored to the blood. This is because (1) an oxygen debt is built up in the tissues, and this equilibrium must be restored in addition to that between oxygen and hemoglobin and (0) actual pathologic changes in the tissues may occur after prolonged anoxemia These are principally in the brain small petechiae punctate hemorrhages and perivascu lar edema occur Cellular degeneration occurs in the corpus striatum the lenticular nucleus and the globus pallidus Though for the most part complete recovery is the rule these changes may be permanent if the gassing is severe and prolonged

Though active treatment can shorten the period of recovery to swise to set minimum time limits before permitting the resumption of normal activity Generally anyone exposed sufficiently to carbon monoxide furnes to require treatment should not return to work in less than 4 to 6 hours while those who have been rendered somiconscious or unconscious even for short periods of time should rest for from 24 to 48 hours If unconsciousness persists for more than 15 minutes after return to fresh air or the start of oxycen therapy hospitalization is indicated

The treatment of carbon monoxide asphyxia depends on its dissociation from hemoglobin and its replacement by oxygen This dissociation does not proceed at the sare rate as does the formation of carboxyhemoglobin Instead it proceeds gradually depends on the mass action of oxygen and is roughly proportional to the percentage of oxygen used in treatment After brief exposures to high concentrations of the gas with rapid absorption the effects of anoxemia may be suffered largely after the victim has been removed from the contaminated atmosphere

Because anoxemia may cause serious damage to brain and other tissues it is of extreme importance to hasten the elimination of carbon monoxide and thus shorten the period of postgassing asphyxia

Henderson and Haggard attempted to show the importance of progressive loss of carbon dioxide in carbon monoxide poisoning and advocated the use of oxygen carbon dioxide mixtures in the treatment of this condition, but these theories find little support today. The concensus is that pure oxygen inhalation is the treat ment of choice, and that the possible minor advantages claimed for carbon dioxide mixtures are more than offset by the loss of the additional oxygen which would be available in the mixture

ARTIFICIAL RESPIRATION

In many cases where exertion prior to gassing has been short and violent, carbon dioxide in considerable amounts may already be present in the blood stream and the addition of more carbon dioxide may actually be harmful In any case, carbon dioxide inhalations are of value only to the already breathing patient. In the nonbreather, who is most in need of resuscitation, artificial respiration either by manual push and pull methods or by a prop erly operated mechanical resuscitator is required to deliver oxy gen to the lungs, and this oxygen will be supplied regardless of the presence of carbon dioxide in the blood stream, the respir atory center, or the resuscitating gas The U S Air Force has set 4 percent carbon dioxide as the maximum safe amount per missible in a breathable atmosphere, stating that at from 5 to 10 percent, failure of compensatory reactions and deterioration may occur." and recommends 100 percent oxygen as the treatment of choice

Treatment should corsist of the following procedures. The victum should be removed to fresh air as speedily as possible, but care should be taken against chilling the body. If the victum is breathing spontaneously 100 percent oxygen should be administered by closed-system inhalators. If breathing is absent or slow artificial respiration either manual or by means of properly oper ated resuscitators delivering 100 percent oxygen, should be used Manual artificial respiration should be of the push-and-pull type and should be either arm-lift back pressure (Holger Nielsen), hip lift back pressure or Silvester method, because these methods give the greatest volume of air exchange¹³ supplemented where possible by an inhalator supplying 100 percent oxygen

After consciousness returns, the patient should be kept supine or semirecumbent and perfectly quiet, and inhalations of oxygen should be continued for variable periods. Appropriate antishock measures should be undertaken in every case

DETERMINATIONS OF BLOOD CO LEVEL

Whenever possible the duration of oxigen therapy should be controlled by repeated determinations of the blood carbon mon oxide level An effective, rapid, convenient, and reasonably ac

curate method for making such determinations either at the bed side or under field conditions is commercially available it do pends on quantitative color changes induced in a measured amount of tannic acid and pyrogallol when brought into contact with a measured amount of blood from a patient who has been exposed to significant amounts of carbon monoxide. The presence of carbon monoxide can be determined within 5 minutes and the approximatic amount within 15 minutes.

Such determinations are of great value in following the course of and determining the duration of treatment for a carbon mon exide asphyria victim as well as in determining whether uncon sciousness is due to simple asphyria or to carbon monovial intexication. When such determinations are impractical a good rule of thumb is to give 1 hour of oxygen therapy for every 10 minutes of unconsciousness They are also of great value in determining the part played by carbon monoxide intexication in which and aircraft accidents in fatal accidents determinations should be made on heart blood withdrawn as soon as possible after the accident. Valuable evidence can be obtained in this way for presentation to a coroner s jury and for various other medicolegal matters which may arise in connection with as phyxial accidents.

RESPIRATORY STIMULANTS AND BLOOD TRANSFUSIONS

The use of respiratory stimulants such as caffeine and sodium benzoate and others is of questionable value but cannot do too much harm provided their administration is delayed until orygen therapy has been commenced. Blood transfusion is of little value. Recently exchange transfusion has been suggested in therapy of this condition. In theory it may be valuable but I have had no experience with it. The formerly advocated administration of methylene blue is definitely harmful and contraindicated. During the period of acute poisoning the blood pressure should be determined frequently and where systolic levels are low the use of levophed (brand of levarternol bitartrate) and plasma volume expanders such as destrict are helpful.

Carbon dioxide inhalation is unnecessary and undesirable in lay hands and is contraindicated in most cases. The same respirators are often used in the treatment of drowning electrocution and other causes of respiratory failure where carbon dioxide deficiency can play no part. Because simplicity and speed of operation in the administration of oxygen are the key to successful treatment and because at best the addition of carbon dioxide to oxygen in the treatment of victims of carbon monoxide poisoning is of minor and questionable value. 100 per cent oxygen should be the treatment of choice and should be carried out in all cases.

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The old adage Prevention is better than cure," is good advice The use of masks where noxious atmospheres are anticipated is of great value, and the military physician may be called on to guide the selection of such masks

THE ALL PURPOSE CANISTER MASK

The all purpose canister mask is the commonest safety device of this type, both in industry and in American fire departments Many types of canisters are available, designed for particular asphysiants, but only the "all purpose" canister has any place in fire fighting and rescue work. This canister contains activated carbon (to remove organic vapors), soda lime (to remove acids and carbon dioxide), copper sulfate (to protect against ammonia gas), calcium chloride (to prevent moisture from entering the can ister), and hopcalite (a mixture of metallic oxides which catalyses the combustion of carbon monoxide from the air to form carbon dioxide), plus a filter pad for smoke It can be used as protection against smoke and gases which do not exceed 2 per cent by volume where adequate amounts of oxygen to support life remain in the contaminated atmosphere. The practical limit is said to be 17 percent oxygen in air, although life is not actually endangered until the concentration falls to 14 percent. It must be remembered, however, that such masks are generally worn when the wearer 15 engaging in vigorous physical effort, hence while oxygen demand is increased

There is an inherent resistance in all such masks from breath ing the air through the various deactivating chemicals. This resistance definitely increases the total effort the wearer is required to make If concentrations in the air exceed the absorbing ability of the masl (for example, should the air contain 30 percent carbon monovide and the mask be capable of filtering only 3 percent) disastrous results will occur. In fact, the danger may be greater than if no mask were worn, for the canister, by removing the irritating smokes and fumes which might otherwise prevent the wearer from penetrating the dangerous atmosphere, may allow him to go sufficiently far so as to impede his own rescue if collapse occurs Also important is the fact that hop calite and other constituents of the all purpose canister may be mactivated if they become wet or moist In addition, the mask is subject to the usual effects of age and deterioration of the rubber tubes and facepieces The mask has a timer, indicating the remaining life of the canister, which should be carefully watched by the wearer When the timer indicates that the canister is two thirds exhausted the wearer should leave the contami nated atmosphere and obtain a new canister The canister mask, then, has many limitations which may render it dangerous par ticularly in inexperienced hands. Its main "virtue" is its rela tively low cost It should be strongly emphasized that military gas masks designed for protection against chemical warfare agents do not protect against any concentration of carbon monoxide and should never be used for this purpose

SELF CONTAINED MASKS

Self contained masks are entirely independent of the atmos phere in which the wearer works They are of several types The hose mask and air pump is the simplest, but for various reasons has failed to find much favor Another type of self contained mask which found considerable use in the past but is gradually being replaced today, is an apparatus in which a soda lime con tainer removes the carbon dioxide from the used air and the remaining oxygen augmented by a fresh supply is circulated back to the wearer through a bellows This apparatus while independent of the outside atmosphere and not having the re stricting features of a hose mask is complicated and cumber some requires unremitting vigilance to keep it safe and still provides some resistance to breathing its chief asset is the relatively long (1 hour) period which it can be used without replenishment

A self generating oxygen canister which is likewise inde pendent of the outside atmosphere has been developed Mois ture in the breath activates certain chemicals within a canister which evolves breathable oxygen. This is circulated to the weat er by means of a bellows arrangement. This mask provides the longest period of wearability. Its disadvantages are that the canisters are relatively expensive may react violently if im mersed in water (as by an accidental fall by the wearer during use) and are bulky and complex to operate

DEMAND TYPE MASK

The most popular self contained mask in use at the present time is the so-called demand type mask This mask supplies either air or oxygen on demand to the wearer by means of a high pressure tank worn on the back or slung at the side which in turn is connected to a reducing valve and chamber A demand valve which is opened by the wearer's inhalation, supplies un limited amounts of pure air or oxygen to the user Masks of this type are certainly the easiest to breathe and work in but are beavy bulky and relatively expensive The maximum useful period of the larger models is 30 minutes, but if worn by a large man doing heavy physical work may fall considerably below this time period Such masks should never be used solo but always in pairs-because should the user himself need rescue only another mask wearer can help him

The question of the late effects of acute carbon monovide poisoning is often raised in medicolegal and retirement cases

Chronic carbon monoxide poisoning is not considered here, but the late effects of acute poisoning may be of interest to those concerned with medicolegal cases, disability, and retirement

The majority of cases of acute carbon monoxide poisonings recover without any residual effects. If acute poisoning is severe and prolonged, however, symptoms may appear and persist These are symptoms which are common to any prolonged and simple asphyxia, for there is no chemical reaction of carbon monovide with either blood or tissue. They are most prominent in relation to the tissues of the nervous system, and may include chronic headaches, personality changes, memory lapse, partial paralysis, and sensory disturbances That these are very rare however, was demonstrated by Shillito and associates13 who investigated more than 21,000 cases of acute carbon monoxide intoxication in the New York City area His figures showed that only 1 in every 500 persons so poisoned developed nervous or mental symptoms. and that for every case of psychosis from this cause, there were 2,000 cases from other causes. Drinker and Cannon's surveyed the hospital records of 21,143 victims of acute carbon monoxide poisoning, mostly nonindustrial They found 514 severe cases in victims who were unconscious on admission Of these, 116 died Permanent mental or nervous damage was shown in only 39 of the 398 survivors, and in all instances this had followed long periods of exposure and unconsciousness. The question of heart damage is sometimes raised in medicolegal cases " While it is undoubtedly true that the heart which harbored pre existing disease may suffer further insult as a result of the superimposed anoxemia, the concensus is, that aside from this expected im position placed upon the heart at the time of the gassing, there persists no cardiac damage

Henderson and Haggard established three conditions which should be met in order to justify a claim of permanent damage after severe acute carbon monoxide exposures (1) at least a 50 percent saturation of the blood, or a concentration of carbon monoxide in the air sufficient to induce at least this degree of saturation, (2) an exposure of at least 3 hours and (3) continuous complete unconsciousness lasting for at least 6 hours after return to fresh air They stated that recovery is practically always complete except perhaps in situations of such severity

In any discussion of acute carbon monoxide poisoning, such as is encountered in accidental fires, it must be borne in mind that seldom is only one gas or vapor encountered in addition to carbon monoxide, smoke contains other toxic gases, such as carbon dioxide, ammonia, hydrogen sulfide, hydrocyanic acid, and nitrogen oxides, which even in low concentrations may in duce pulmonary edema, as well as an aerial concentration of minute solid particles which are highly irritating There is ample

evidence to show that the effect of the toxicity potential of two or more gases or vapors is more than additive

STRUGARY

The hazards of carbon monoxide poisoning are of particular interest to the military physician for it is an ubiquitous gas which may be encountered on almost any military installation This article reviews the pathologic physiology and clinical pic ture of carbon monoxide asphyxia and the sources and concen trations of the gas evolved under various conditions

In the treatment of acute carbon monoxide asphyxia it is em phasized that the inhalation of 100 percent oxygen supplemented whenever indicated by artificial respiration of the push and pull type or by properly operated and approved resuscitators is the sheet anchor of adequate therapy

Individual protection by means of various types of masks is considered and the advantages and disadvantages of each type are presented Because of their interest to redical officers con cerned with disability and retirement the problems of late effects of acute carbon monovide asphyxia are discussed and the principles of establishing a justifiable claim are set forth

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SUBSTITUTES FOR AND ADJUNCTS TO ATROPINE IN NERVE GAS POISONING

I HENRY WILLS Pb D

TERVE GASES produce three types of functional changet (1) choline-like effects on the glands and smooth muscles of the gastrointestinal, genitournary, and respiratory tracts, the circular smooth muscle of the iris, the sweat glands, and the heart, (2) nicotine like effects on skeletal muscles, gan glia, and the adrenal glands, and (3) facilitation and, with larger doses, inhibition of synaptic transmission in the central nervous system

The symptomatic treatment of nerve gas poisoning has consisted of the administration of atropine, or drugs with similar actions, to stop the choline-like and the central nervous system effects in general such drugs have very slight, if any, effect on the nicotine-like actions. The most important of this latter group of effects paralysis of voluntary muscles, has been combated by artificial respiration.

Through the co operation of various pharmaceutical companies, the pharmacology branch of this installation has been able to test a large group of synthetic compounds for efficacy against nerve gas poisoning in laboratory animals. The standard test animal for these studies has been the rabbit. Unanestichetized white rabbits of unselected sex are injected through a marginal ear vein with 2 mg/kg body weight of atropine sulfate or one of the test drugs. Two minutes later the animals receive through the same vein, an injection of three the LD₁, of nerve gas. Those drugs which save more than one half of the animals from dying with this dose of poison are then tested in the same way with four LD₁, so fixer gas. The dose of nerve gas is increased by increments of two LD₂, s until a level is reached at which the drug saves less than one half of the group. Drug mixtures were tested in the same way

At the present time two groups of drugs contain those synthetic compounds which seem most likely to yield satisfactory replacements for atropine One of the groups consists of darstine (brand of mepiperphenidol), diparcol (brand of 10 (β diethylaminoethyl)-phenothiazine hydrochloride), monodral (brand of penthienate

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bromide) neotropine (brand of 2 diethylaminoethyl (2 cyclopenten 1 yl) 2-thienylacetate hydrochloride) pro-banthine (brand of propatheline bromide) and systral which either are available commercially or are being considered seriously for marketing the other group consists of newer experimental drugs designated by numbers 19 9° 318 2850 2973 and 3192 which have not yet been put on the market. In general the drugs in the latter group of compounds are more potent and somewhat more toxic than those in the former group

These two groups of compounds are comprised largely of deriv atives of N diethylaminoethanol with the ester linkage being the predominating type between this moiety and the remainder of the molecule Table 1 illustrates the effectiveness of several of these compounds

TABLE 1 P tenc f 2 mg/kg d of var us omp nd g t f LD of erv g n th bb t

Drug	Mı	M rtal ty		
	Numb d d	Numbe te ted		
Atrpın ulft	6	6		
Da	3	6		
M odrl	2	6		
P o-banthin	4	6		
N 19	1	6		
N 92	2	6		
No 318	2	6		

The rabbit tends to exaggerate the efficacies of the synthetic compounds as compared with that of atropine probably because of the existence of a potent atropinesterase in this species to a greater extent than in most other mammals. In Drugs which have been found to be highly active in the rabbit are also of comparatively high activity in the rat the cat the dog and the monkey. In the latter species, however, in contradistinction to the rabbit no drug has been found to be markedly more active than atropine Although all of the compounds listed in table 1 are more effective than atropine sulfate in the rabbit none of them are more effective than atropine sulfate in any of the other animal species studied. Therefore none of them are sufficiently effective and innocuous to warrant their displacing atropine as the standard anticolinergic drug for treating nerve gas poisoning. Experimental work on the

symptomatic treatment of intoxication by nerve gases now is centered, therefore, on finding adjuncts to atropine

Compounds which increase the lifesaving effectiveness of the standard dose of atropine have been found among the following groups of drugs anticonvulsant, adrenolytic, curarimmetic, ganglion blocking, locally anesthetic, prostigmine like, and the weakly anticholinergic with central depressant action The following commercial [darstine, pendiomide, pentamethonium, prenderol (brand of 2,2-dieth) 1,3 propanediol), pronestyl (brand of preaine amide hydrochloride), and thorazine (brand of chlorpromazine hydrochloride)] and experimental drugs (Nos 144, 227, 253 2642, 2920, and 3258) seem to have the best combination of activity and low toxicity. Among these adjuncts, the experimental group is definitely more toxic on the whole than the commercial group, but is also more active.

The 12 compounds in these two series fall into the following types anticonvulsant, ganglion blocking, locally anesthetic, and weakly anticholinergic with central depressant actions. Anti epileptic drugs like disantin (brand of diphenylhy dantoin sodium), dimedione, paradione (brand of paramethadione), and tridione (brand of trimethadione), have not been found to have adjunctive value in experimental animals, although alone they are capable of preventing grand mal like electroencephalographic seizures and convulsions induced by nerve gas 7 Atropine also prevents these effects Examples of the effectiveness of mixtures of adjuncts and atropine are given in table 2

TABLE 2 Potencies of mixtures of adjuncts with 2 mg/kg of abopm sulfate against four LDs os of nerve gas in rabbits

		Mort	ality
Adjunct	Dose	Number died	Number tested
None	_	6	6
Pentamethonium	5 mg/kg.	3	6
Pronestyl	40 mg/kg	1	6
Thorazine	4 mg/kg	1	6
No 144	125 µg /kg	1	6
No. 227	500 µg /kg	0	6
No 2642	25 mg/kg	0	6

It appears also that combinations of two different adjuncts with atropine can have more pronounced effects in experimental ani

bromide) neotropine (brand of 2 diethylaminoethyl (2 cyclopenten 1 vl) 2-threnylacetate hydrochloride) pro-banthine (brand of propantbeline bromide) and systral which either are available commercially or are being considered seriously for marketing the other group consists of newer experimental drugs designated by numbers 19 92 318 2850 2973 and 3192 which have not yet been put on the market. In general the drugs in the latter group of compounds are more potent and somewhat more toxic than those in the former group

These two groups of compounds are comprised largely of deriv atives of N diethylaminoethanol with the ester linkage being the predominating type between this moiety and the remainder of the molecule Table 1 illustrates the effectiveness of several of these compounds

TABLE 1 P tenc 12 mg/kg d us comp nd aga 1 / ur LD

7 72 8			
	M et 1 ty		
Drug	Numb d d	Numbe t ted	
Atr pin ulf t	6	6	
Da t	3	6	
M odr l	2	6	
P 0-banthin	4	6	
N 19	1	6	
N 92	2	6	
N 318	2	6	

The rabbit tends to exaggerate the efficacies of the synthetic compounds as compared with that of atronine probably because of the existence of a potent atropinesterase in this species to a greater extent than in most other mammals "Drugs which have been found to be highly active in the rabbit are also of compara tively high activity in the rat the cat the dog and the monkey In the latter species however in contradistinction to the rabbit no drug has been found to be markedly more active than atropine Although all of the compounds listed in table 1 are more effective than atropine sulfate in the rabbit none of them are more effective than atropine sulfate in any of the other animal species studied Therefore none of them are sufficiently effective and innocuous to warrant their displacing atropine as the standard anticholinergic drug for treating nerve gas poisoning Experimental work on the

REPORTING MILITARY MEDICINE

ROBERT J BENFORD Colonel USAF (MC)

EVER before in the peacetime history of this nation have such great numbers of American physicians, dentists, and allied scientists engaged in the practice of their profession in so many areas in the world Today about 3 out of every 10 officers of the medical services on duty in our military departments are serving outside of the United States. This unprecedented situation—marsing from the need for professional support of our occupation troops and their families, for our far flung military missions, and for those strategic forces allied with the NATO nations—is extending the most recent advances of American medical research and practice to the four corners of the earth. It has likewise created global opportunities for personal achievement by these officers—achievement that is attained in everyday per formance of duty.

Schooled in the high standards of this country these military physicians and dentists are serving as medical ambassadors of the American system of professional education. Their influence on the health conditions in many overseas communities is inestinable, nevertheless, it is positive and far reaching. In their relation with local civilian physicians there is always an exchange of knowledge because learning never stops. The current literature of this specialty is being created today by the hundreds of American physicians in the armed services here and overseas, who are writing accounts of their professional observations and clinical achievements.

In Turkey recently a U S Army doctor aided in tracing the source of an epidemic of typhoid fever among immunized soldiers of that country In Saudi Arabia medical officers have encountered a variety of tropical diseases that are rarely observed in this country Reporting from a hospital ship, two Navy surgeons per formed what are believed to be the first cardiac operations on native patients in horea. An enterprising dental officer apparently has solved some of the problems involved in making dental appointments with members of a ship s crew.

Pre t do 29 No mbe 1954 t th 61 t anual m t g of Ass c t f Mitary Surg o W sh gton D C. C 1 B afo d, f m ly Ed tor U S Armed Forces Medical Journal s now g ed t th Off f th A tant Secretary f D f (Health d M d cal) W hungt D C.

in tone the first issue contained an article on Training Projects for the Summer of 1922, and notes on C M T C and R O T C activities and on the organization of the Army of the United States With the issue for October 1943 the name was changed to the Bulletin of the U S Army Medical Department It was subsequently published monthly under the editorship of Major Johnson F Hammond now associate editor of the Journal of the American Medical Association.



Figur 4 M jor Guy B D t m mb f th M d l Bull b tur d i 1953

After study of the recommendations tees Secretary of Defense Forrestal approval to the general plan of lations Board to publish an Armed Mr Louis Johnson his successor in a taries of the military departments on a the establishment of the Armed Forces!

cy, and on the same date addressed a message to "the medical personnel of our Armed Forces" in which he stated

The formation of the United States Armed Forces Medical Journal is a result of the consolidation of the Bulletin of the U. S. Army Medical Department and of the U. S. Natal Medical Bulletin and marks another "first in the annals of the Armed Forces of our country. It emphasizes the close unity and cooperation which have always existed among the medical personnel of the Army Navy and Air Force All of us are proud of their record and their epochal achievements in the past and I am certain that in the future this medium will contain reports of accomplishments in military medicine of even greater significance to the health and welfare of the personnel of our Armed Forces and our Nation."

Under its own charter and joint regulations of the Army Navy, and Air Force, the Armed Forces Medical Publication Agency publishes the Journal and its supplement, the Medical Technicians Bulletin, in accordance with general policies of Dr Frank B Berry, Assistant Secretary of Defense (Health and Medical) Its staff includes officers of the Medical Corps of the Army, Navy, and Air Force, one of whom is editor and the others associate editors. The position of editor is rotated every 2 years. The Agency's publications are printed by the U.S. Government Printing Office, and distribution is made by the three services in accordance with the recommendations of the Surgeons General

The first editor of the Journal was a Navy officer, Captain Joseph L Schwartz, now retired, who had been serving as editor of the U S Naval Medical Bulletin when it was suspended Col onel Wayne G Brandstadt, the last editor of the Bulletin of the U S Army Medical Department became the first Army editor of the Journal in July 1951 Also retired from the service Colonel Brandstadt is now assistant editor of the Journal of the American Medical Association

The worldwide circulation of the U S Armed Forces Medical Journal reached a high of nearly 40,000 copies per issue during the korean war For the past 3 years about 30,000 copies each month have been distributed. These figures do not include paid subscribers, who are served by the Superintendent of Documents. The Journal is received by all medical services officers on active duty and many reserve officers in private practice. It goes to all medical and dental school libraries in the United States and Canada and to many in South America and Europe. It also is sent to nearly 200 editors of other medical journals in exchange for their publications.

In the 60 issues farme for in the past 5 years, the Journal has printed a total of fife interference of those, 1,130, or 91 fife.

contwere contributed by regular and reserve officers of the medical services. The remainder came from authors without military affiliations. The published reports have been informative diverse and often controversial. They cover professional and frequently administrative aspects of the climical specialities as well as an occasional historical note.

In its regular departments the Journal has brought its readers information and news of both military and medical interest fload coverage is given to new books and monographs in the medical sciences—a total of 1 313 reviews by qualified specialists have been published. Few monthly medical periodicals approach this average of more than 20 reviews of new books per issue. Since January 1955 the Journal has brought its readers each month the report of a clinicopathologic conference presented in one of the larger Army Navy or Air Force hospitals.

The Journal is a medium which enables authors to share ther new professional knowledge with fellow officers and practitioners everywhere in the years to come it will continue to aid the miltary medical services in their mission of maintainin, the health of our fighthing forces

GET THAT READER-AND HOLD HIM

As a const nt reader and an occasional editor I used to ty conscient on ly to plow throg h the mounds of impass ble prose that reached my desk But no more I we made a decis on that I suspect a good many other readers and ed tors will also make—if indeed they have not made t altready I we decided that if the writer wont say what he has to say in an interest too many medical articles clamoring for the attention of a doctors as t s Scientific prose needn t be dismal it can be made readable—wen ple santly so—if the writer will only work at the job But he s got to make a real effort to capture the readers att tron and to hold it.

—HENRY A DAVIDSON M D M d l E om

THE ARMY AVIATION MEDICINE PROGRAM

SPURGEON H NEEL Lieutenant Colonel MC USA

HE NATIONAL Security Act of 1947, as amended in 1949, provides that, "In general the Army shall include land com bat and service forces and such aviation and water trans portation as may be organic therein A series of subsequent agreements between the Secretaries of the Army and the Air Porce have established that, generally, the Army may have such fixed wing aircraft (not exceeding 5,000 pounds empty weight) as it requires to perform its organic missions, and rotary wing aircraft (without weight limitations) as required for its logistic and tacti cal missions within the combat zone As envisaged, Army avia tion will be organic to the several existing branches of the serv ice, and no separate "Corps of Army Aviation" will be establish ed Revolutionary tactical and logistical developments in recent years have necessitated a rapid expansion in Army aviation, both as to missions and the numbers and types of aircraft required

Concurrently with this rapid expansion in Army aviation, there has been increasing emphasis on aviation medicine within the Army The Army Medical Service has two primary fields of responsibility and interest in the Army aviation program. They are

- 1 Technical responsibility for medical matters pertaining to the over all Army aviation program, and
- 2 Over all responsibility for all matters pertaining to the or gamization and utilization of Army Medical Service Aviation

While these two basic fields of interest are closely related, em phasis in this article will be placed on the first, or technical responsibility of the Army Medical Service The clinical aspects of forward air evacuation by Army Medical Service helicopters have been discussed in a previous article 1

ARMY AVIATION

It is axiomatic that maximum exploitation of the full capabil ities of Army aviation depends, to a considerable extent, on the proper selection and care of Army flyers The immediate corollary is that responsible commanders, as well as individual flyers, must have sound timely medical advice This advice should come from Army medical officers, trained in aviation medicine and possessing a realistic knowledge of Army aviation and its specific problems

F m Offic of Th Surg m G n ral Departm at of th Army Washingt D C 99 0 55 1341

It is advantageous to examine some of the basic characteristics of Atmy aviation particularly those affecting the Army Modicial Service Army aviation is organic not only to the Army but also to the several branches of the service and to the major tactical units in the field. Thus Army aviators and modicial problems are not concentrated in a few well defined locations but are dispersed throughout the entire combat zone. The Army Modicial Service is confronted with the problem of caring for steadily in creasing numbers of flying personnel widely dispersed, and with a variety of missions.

The stresses of Army aviation are specific to a certain extent Weight limitations and operational requirements praclude equip ping Army aircraft with complex navigational aides and, normally copilots are not used. Thus the Army aviator must maintain continuous surveillance over the terrain his aircraft and such instruments as are provided Further in many cases the pilot has other concurrent responsibilities such as caring for a patient adjusting artillery fire observing enemy activities et cetera. The stress of this type of flying cannot be overly emphasized. The many missions of Army aviation and the fluidity and uncertainties of combat in forward areas require frequent flights in all sorts of weather with very little rest or inactivity between sorties.

Even between flights there is little abatement of stress On completion of fatiguing missions. Army aviators are required to live under conditions comparable to those of front line infantry troops. They are rotated to quet areas on a basis of completion of a relatively long fixed tour. This lack of complete relaxation between missions, and the presence of certain unavoidable deprivations further increase the hazards of continued flying officiency Maintenance of efficiency despite these necessary undesirable factors requires an effective personnel management program which in turn should be based on sound medical advice.

ARMY AVIATION MEDICINE

Basically the Army aviation medicine program includes the lowing (1) Physical examinations for proper selection of flying applicants and as a guide for their subsequent use as pilots, (2) clinical care of flying persohnel considering the specific problems inherent to such personnel (3) a care of the flyer program to preserve maximum individual and unit efficiency (4) advice to responsible commanders and boards of officers concerning medical aspects of aviation problems and (5) development with other responsible agencies of improved policies and procedures for use of flying personnel of aircraft and of equipment

The best-known function of aviation medicine is the perform ance of initial periodic and special physical examinations on

flying personnel Army Regulation 40-110 prescribes in detail the standards and procedures for the medical examination for flying These standards place increased emphasis on the psychologic, visual, and hearing standards To be completely effective, examining officers require additional training in these important and specific fields, as well as experience with Army aviation This latter requirement is particularly important in performing the so called ARMA (Adaptability Rating for Military Aeronautics) The over all psychologic evaluation of the aviation candidate cannot be overly emphasized Air Force experience indicates that this selection should be made only by officers who are thoroughly familiar with the hazards and stresses incident to flying, and their potential effect on the examinee in question. It is not reasonable to expect an officer unfamiliar with Army aviation to adequately evaluate the flying applicant.

The continued stresses of Army aviation dictate that flying personnel receive annual medical evaluations which serve as a basis for individual recommendations to pilots examined, as well as improvement of the over all Army aviation program Personnel involved in aircraft accidents are required to have medical evaluation prior to returning to flying duty Aviation medical officers should recommend detailed corrective action for all latent or manifest defects noted

Wherever feasible, it is advantageous to have aviation medical officers treat flying personnel who require either outpatient o inpatient care Experienced aviation medical officers are familia. with problems peculiar to Army aviators, as well as the effects of certain diseases and medications on flyers Many diseases and treatment regimens require that a pilot be removed from flying 1. ties temporarily The common cold, a nuisance to anyone, matter of much graver concern to the pilot. The use of such drug as the antihistaminics and the barbiturates requires that pilo not fly during the period of effectiveness of the drug The 21 a 10 medical officer should integrate his professional activitie ... those of the medical installation within which he function should be charged with the care of nonflying as well as a personnel and his additional training should be explore tion medicine should not be isolated from the ove all effort of the command

The care of the flyer" program is preventive medical fied. The truly effective aviation medical officer I now performs their medical examinations maintains essurecords, and treats his patients. These are the furments of the "care of the flyer" program Aviation should periodically visit air installations in and should fly with their charges to determine

situations and problems. The recognition of incipient diseases and physical defects permits early preventive or corrective action prior to the time a pilot becomes disabled. The time spent by the aviation medical officer in living with his pilots pays large dividends in better medicine and better flying

Commanders and boards of officers investigating sircraft accidents should receive ound realistic medical advice and oninion While participation by medical officers on boards of investigation borders on so-called administrative medicine such participation is a must if corrective action is to be effective Medical advisors to such boards should be well prounded in aviation medicine and reasonably familiar with Army aircraft and necessary administra tive procedures. Aircraft accidents generate casualties, and must be minimized if the noneffective rate among Army aviators is to be reduced Effective corrective action will also improve the safety and reliability of Army aviation

The sound future development of the still infant Army aviation program requires full effective medical participation. The individual pilot should receive full consideration in the development of policies for his training and utilization. While it is impractical to develop so-called military characteristics for Army aviators those best suited must be selected from resources available Army medical officers familiar with the physical and mental require ments for flying can provide technical guidance which is so es sential in the development of sound policies and procedures. In the development of aircraft the pilot likewise must receive full consideration Equipment and instruments should be designed to minimize fatigue and enhance safety and reliability Responsible engineering agencies should have access to sound professional medical guidance

THE AVIATION MEDICAL OFFICER

With the establishment of an autonomous Air Force most quali fied flight surgeons elected to remain with the U S Air Force Initially the Army relied completely on the support of these highly qualified and experienced men for the care of Army avia tion personnel An occasional Army medical officer was sent to the U.S. Air Force School of Aviation Medicine at Randolph Air Force Base Tex These officers normally returned to their former duty station and assignment and did not actively participate in the practice of aviation medicine Experiences in horea indicated the Army Medical Service's need for an active aviation medicine program

In late 1953 The Surgeon General sent a group of junior Army medical officers to the U S Air Force School of Aviation Medi cine to attend short courses of instruction followed by brief pen

ods of orientation at the Artillery Center, Fort Sill Okla, then the site of Army aviation training These officers were subse quently assigned to commands overseas and within the United States where they might perform duties related to the examination and care of flyers Surgeons of major subordinate commands assigned these officers against existing vacancies and established the degree of effort to be devoted to the practice of aviation medicine

In 1954 a revision to Special Regulations 605 105 5 Commis sioned and Warrant Officers Personnel Military Occupational Specialties, authorized the Military Occupational Specialty (MOS) number of 3160, representing the Aviation Medical Officer These officers provide aviation and general medical service for Army aviation pilots and ground personnel in hospitals, dispensaries, field units and other military installations. To qualify for this MOS, Army medical officers must be graduates of a course in aviation medicine and must be capable of performing the duties required The aviation medical officer is the key to the success of the over all Army aviation medicine program in the field, he is responsible fo the medical selection and care of Army aviators at staff level, he provides necessary advice concerning their development and utilization. His duties are prescribed in Army SR 605 105 5

The Army aviation medical officer must be a well rounded phy sician with additional training and responsibilities in aviation medicine As Army aviation is organic to the existing branches of the service, the aviation medical officer is an integral part of the Army Medical Service. His responsibilities toward nonaviation medicine enhances rather than reduces his effectiveness in the practice of Army aviation medicine.

TECHNICAL GUIDANCE

There are two primary facets to the implementation of the Army aviation medicine program Centralized technical guidance is necessary for efficiency and standardization. An effective field organization is required for soundness and realistic support. The Army has accepted the proven soundness of Air Force medical doctrine and procedure and has adapted them to actual requirements of the Army Department of the Army Technical Bulletin (TB Med 236) Medical Army Aviation Medicine dated 2 March 1955 contains the basic technical information required by aviation medical officers in the field

ORGANIZATION FOR ARMY AVIATION MEDICINE

Although the MOS 3160 Aviation Medical Officer, is author ized and selected Army medical officers are being trained in aviation medicine, there is still no established organization for

their use in the field. As available aviation medical officers are being assigned against requirements from major commands. No Table of Organization and Equipment (T/O&E) or table of distribution contains this MOS and requisitions are submitted against vacancies in other Medical Corps MOS s Surgeons of major commands are permitted considerable freedom in the assignment and use of these officers. Available information is that aviation medical officers are being used in general medical duties devoting varying periods of their time to the practice of aviation medicine while this may reflect the existing shortage of medical officers it indicates the desirability of integrating aviation medicine with the over all medical effort of the command

In late 1954 major commanders were requested to study the problem of assignment and utilization of aviation medical officers and to submit specific recommendations by July 1955 Based on these recommendations basic T/O&E s and tables of distribution will be evaluated with the view toward incorporating spaces for aviation medical officers. From information received to date it seems that few additional Medical Corps spaces will be required It is more likely that aviation medical officers will be substituted for appropriate existing positions primarily Medical Officers General Duty (MOS 3100) and will be charged with the care of nonflying as well as flying personnel

Pending completion of this evaluation aviation medical officers are being assigned as they become available At present, the basis of assignment is One medical officer per division (air borne armored and infantry) one per corps and army beadquarters and one per 30 pilots on an area basis Those assigned to major command headquarters will have a dual function They will care for assigned and attached flying personnel and will also assist the surfacen in the review of medical examinations and related administrative procedures Experience has indicated that these medical officers can and should function in existing medical installations

At posts located within the continental United States it is believed that aviation medicine should be included within the functions of the post surgeon. While divisional size units should have assigned aviation medical officers in connection with their readiness mission assignment of medical officers to separate aviation units and activities is not considered the most economical use of such officers. A more equitable procedure is the identification of appropriate spaces in the medical portion of tables of distribution to ensure adequate aviation medical support on a post basis and under the supervision of the post surgeon While aviation medical officers will require additional technical and administrative assistance in requirement is presently fore-

seen for the establishment of a special enlisted specialty in support of the program

One overseas theater has submitted a recommendation that a cellular aviation medicine team be included in T/O&E 8 500 for aviation medicine support on an attached or area basis. This recommendation is being held in abeyance pending completion of the major study mentioned. Within the United States, required medical examinations for flying are being accomplished at medical installations which have been designated by major command surgeons and approved by The Surgeon General Specialized equipment required is contained in the U.S. Air Force Flight Surgeon's kit which will probably be standardized for use within the Army in the very near future. Pending this action, individual items of additional equipment are being issued on the basis of justification for the aviation medicine mission.

WINGS AND PAY

It is inevitable that problems related to the authorization of distinctive insignia and additional flying pay for aviation medical officers will have to be resolved. Both incentives have proved necessary in the U S Air Force The Surgeon General is giving careful thought to these problems

Of these two incentives, the authorization of distinctive wings appears to be the more immediately important. The identification that is so important to any practice of medicine dictates that avia tion medical officers wear wings denoting their status. From custom and long experience, flying personnel have come to expect their physicians to wear wings. Accordingly, The Surgeon General has recently submitted a recommendation that a distinctive insign has be developed and authorized for aviation medical officers. Approval of this recommendation has been deferred pending final action of the Army Uniform Board. If approved, the insignia will probably be the Army Aviator's Badge with caduceus superimposed.

The problem of flying pay for aviation medical officers is a more difficult one While it is Department of the Army policy that men required to participate regularly in frequent aerial flights as a part of their official duties should be authorized additional flying pay careful consideration must be given as to who should be entitled to such pay and when Presently the subject of flying pay for aviation medical officers is resolved by major commanders with wide variations in policy. As a builder of morale, additional pay is a double-edged sword. An example can be found in the infantry division Battalion surgeons may well resent a medical officer normally working in the divisional rear area who receives additional hazardous duty pay Another example is in the career

pattern of aviation medical officers themselves. Those men in staff positions at higher headquatters who are best qualified by training and experience but not actually required to fly to the extent of those located at lower echelons will resent the deprivation of flying pay incident to their advancement to positions of greater responsibility.

Personally I would recommend that an aviation medical officer s wings be awarded on a basis of training and experience with designation by The Surgeon General By contrast I would recommend that additional flying pay be authorized on a basis of actual duties performed with the decision resting with the major commander concerned This will ensure consonance with current budgetary policies The MOS 3160 Aviation Medical Officer should be granted to medical officers completing the course of instruction at the U S Air Force School of Aviation Medicine which is the present procedure Authorization to wear the distinc tive wings (when approved) should be withheld until the aviation medical officer has accrued certain additional experience to include a period of duty in aviation medicine accumulation of a prescribed number of flying hours the performance of an estab lished number of medical examinations for flying and the recommendation of a responsible senior Army aviation medical officer

CONCLUSIONS

There is a requirement for an Army aviation medicine program The Surgeon General has established such a program and is developing it commensurate with actual needs in the field Tech nical guidance based on the adaptation of accepted Air Force medical doctrine to actual Army requirements is considered adequate and is reflected in a medical technical bulletin. The current primary objective of the Army aviation medicine program is the development of an effective organization for its implementa tion in the field. Full use will be made of established Air Force aviation medicine training facilities and Army medical specialists in existing Army medical installations Aviation medical officers should be authorized distinctive insignia on completion of certain qualifying experience and on designation by The Surgeon General. Additional flying pay for Army aviation medical officers should be contingent upon actual duties performed and should be the prerogative of major commanders in the field The Army Medical Service must keep pace with the rapidly growing Army aviation program

REFERENCE



Clinicopathologic Conference

Letterman Army Hospital San Francisco Calif

COUGH DYSPNEA AND CHEST PAIN

Summory of Clinical History A 59 year old white woman was admitted to this hospital on 19 May 1954 with a cough productive of purulent material, shortness of breath, and weight loss. The patient had been in rather poor health since the onset of arthritis some 10 years ago. She first developed symptoms referable to the chest in 1952 when she had a cough which lasted several months. Two weeks before admission she developed a severe, racking cough productive of from 50 to 60 ml. of purulent mater ial. This was associated with an aching pain throughout the chest which was aggravated by the act of coughing. During this time she had become progressively short of breath, but she denied any hemoptysis. Over the past 10 years she had lost 55 pounds in weight and during the past 2 weeks she had lost 5 pounds.

A diagnosis of rheumatoid arthritis had been made 10 years ago The arthritis began in the feet (metatarsophalangeal joints of great toes) involved the metacarpophalangeal joints of the fingers some months later, and eventually involved every joint of the extremities and spine to a slight degree with residual deformity of the joints She had taken many types of antiarthritis medications, the nature of which is not known. At the time of admission the arthritis appeared to be inactive. Previous oper ations included a tonsillectomy at the age of 25, panhysterec tomy for "bleeding tumor" at the age of 40 and full mouth extractions at the age of 47 She gave no history of rheumatic fever, syphilis, renal disease, or liver disease. She was a known hyper tensive of unknown duration. The family history was noncontributory.

Physical Examination The patient's height was 62 in, her average weight, 138 lb present weight, 81½ lb temperature, 99 F, pulse, 72 and blood pressure, 172/78 rr 11; Shr war

Brg Gen. I me O GII pe MC USA Command ng Office From the M di S Ser Col Wilburth Berry MC USA Ch f

a thin malnourished appearing Spanish woman in moderate res piratory distress with a frequent cough productive of a green purulent sputum Her movements were slow because of joint distress and general weakness. Her eyes appeared sunken. The left cornea was considered to be either abraded or to contain edema fluid in that it was irregularly refractile. The retinal vessels demonstrated narrowing of the arterioles with mild A V nicking There was a 1 cm hard excoriated lesion of the helix of the left ear An excornated area was present on the left side of the nasal septum Diffuse inspiratory rales were heard through out the lung fields but most prominent on the right side The cardiac rate was regular No murmurs were heard The point of maximal impulse was 2 cm lateral to the midclavicular line in the left fifth interspace and was forceful

The firm smooth liver border was 3 cm below the right costal margin The spleen was easily palpable one fingerbreadth below the left costal margin and was firm Pelvic examination was neg ative On rectal examination there appeared to be a large quantity of yellow green foul liquid feces and mucus The left costovertobral anglo was tender The hands elbows shoulders knees ankles and feet showed deforming arthritic involvement. The metatarsophalangeal joints of the great toes had large red ten der swellings with atrophic skin overlying them All of the mus der sweitings with autophic and the skin was generally dry and scaly with poor tissue turger Slight presacral edema and moderate retibial edema were present There was a 2 by 4 cm freely movable node in the right axilla The remainder of the exami nation did not reveal any significant abnormality

Labor tory Studies Initial laboratory studies were as follows Frythrocyte count 3 9 million per cu mm hemoglobin 7 3 grams per 100 ml leukocyte count 15 300 per cu mm with 78 percent neutrophils 13 percent lymphocytes 3 percent monocytes and 6 percent eosinophils Urinalysis showed a specific gravity of 1 010 4 plus albumin 3 to 4 red blood cells and a few bacteria The serologic test was negative. The blood unc acid was 8.2 mg per 100 ml CO 14 2 mEq/L chloride 114 mEq/L calcium 32 mg per 100 ml alkaline phosphatase 6 6 units (Shinowara Jones and Reinhart method) and potassium 5 6 mEq/L On 21 May the blood urea nitrogen was 64 mg per 100 ml the total protein 9 9 (albumin 5 4 globulin 3 8) gm per 100 ml Acid fast studies of the sputum were negative as were the Papanicolaou Sputum culture showed beta hemolytic streptococci alpha hemolytic streptococci and Micrococcus pyogenes var aureus Culture of a rectal swab showed Eschenchia coli Re neat urinalysis showed 3 to 4 plus albuminuma with a specific gravity as high as 1 025. On only one specimen were rare coarse

granular casts observed Examination of a stool specimen was negative for ova and parasites A roentgenogram of the chest showed increased lung markings throughout both lungs, suggesting generalized pulmonary fibrosis There was blunting of the right costophrenic sulcus and some thickening along the right lateral chest wall, suggestive of an old inflammatory disease Roentgenograms of both hands showed advanced arthritic changes involving many joints

Course in Hospital When the patient was initially admitted it was not known whether the pulmonary findings were due to pri mary pulmonary disease or were secondary to congestive failure The venous pressure was 140 mm of water with arm to tongue circulation time of 11 seconds She was digitalized and given thiomerin (brand of mercaptomerin sodium) with loss of 31/2 lb of body weight in 1 day She was started on penicillin and streptomycin Her pulmonary symptoms seemed to clear 2 days after admission but her general course continued downhill She had retention of nitrogenous products with a nonprotein nitrogen as high as 147 mg per 100 ml Along with this, her CO, combining power fell to 10 8 volumes percent and the potassium rose to 8 2 mEq/L Because of the anemia she was given 500 ml of whole blood which restored her hemoglobin level to 11 8 gm per 100 ml In spite of all the therapeutic measures she continued her down hill course and died quietly at 2320 hours on 24 May

DISCUSSION

Det Gbs a Thus 59 year old white woman with emaciation marked weight loss and chronic illness had had crippling deforming arthritis ultimately involving every joint of the extremities and spine Several features indicated respiratory tract involvement. There had been a chronic cough of several months duration some 2 years previously and a severe productive cough for 2 weeks prior to this bospital ad mission. A chest roentgenogram revealed increased lung markings throughout both lung fields. She was dyspined and had diffuse inspiratory rales. The liver and spleen were enlarged and firm. Diarthea was implied since rectal examination revealed large quantities of liquid feces. Pretibial and presacral edema were present. Involvement of the hematopoietic system was manifested by anemia leukocytosis neutrophilia and eosinophilia. Finally, the marked albuminuria utemia acidosis. hyperpotassemia and hyperuricemia denoted the presence of renal lesions. May we see the x-rays. Doctor Wells?

Do to Wils Films of the wrists and hands (fig 1) show very extensive destructive changes involving all of the joints of the wrist and most of the joints of the fingers. It is a destructive type of ar

Maj Jh R Gbson MC USA R dati Itm l Medicin

Col Ps 10 Wells MC USA As man Chi f Rad 1 gr Section

thrit's with narr wing of the lints and subluxation of some joints Some joints show ankylosis There is sociat d atrophy of the soft tissue. The e are the chinges seen in theum told arthritis. The lune fields bilaterally (fig 2) show emphysema more or less evenly distri buted There is an increase in the bronchovascular markings which are nonspec fic in prearance. There is some thickening of the plenra which would indic to old or possibly a recent inflammatory process in the pl ura. The marking in the lung fields are no specific and are on the b s s of f brosis or per bronchial infiltration which is limit ed to the larger subdivisions of the bronchial tree. The heart is not enlarged there s some enlargement of the orta There are no definite hilar nodes isible In the feet there are extensive chapes in the ioints which are all o consiste t with the diagnosis of theumatoid arthr tis

D + Gb I shall not discuss each of the diseases that m y involve each of the org is and system mplc ted in this patient.

We remarks will be restricted to the few diseases which could cause all or most of these protean manife tations

I believe that the arthritis is the key to this case I am nit gued by the hard excert ted les on of the helix of the ear the onset of the thriti in the met tarsophalangeal to nts of the gre t toes the hyperur cem and the ev dence of re al dis Hench and ass ci ates of the M vo Clinic have said that chronic arthritis associated with distinct renal impairment suggest gout until or ved otherwise The m for ty of gouty p t ents d e of uremia a d the age at onset in this p tent is quite compat ble with the diagn sis of gout I c n only speculate that the less n f the helix of th ar wa tophus The loc tion and de cription ar entir ly compatible I regret that the lesio was not needled and n ttempt m de to demonstrate monosodium urate cryst is by the murex de test I m y similarly peculat that the ex corrared are on the left side of the n 1 septum overl d nother tophus-a not unusual site

But there are several object one to the diagnosis of gout. Only about 5 percent f gouty subjects are females A positi e family history is pre ent in 50 percent of fem les with gout Wolfson nd associates, have stated that tophaceous gout in women begin bef re the menopause it learly dd not n th s case The hyperuricemia could well be expl ned on the basis of renal fa lure I might mention in passing that the ur c acid level in normal and gouty fem les is lower than th t in the r m le co nterparts and many uthor ties cons der a serum wic acd level of 5 m., pe 100 ml in a fem le a significant as one of 6 mg per 100 ml a mal Chron c gouty arthritis can be deforming and criping but the pine shoulders and hips are rarely involed i gout Thire are of features suggestive of gout on the x-r ys we have available Anothe considerable object on 1 that gout do s not explain the pulmonary findings hepatosple omeg ly marked weight loss

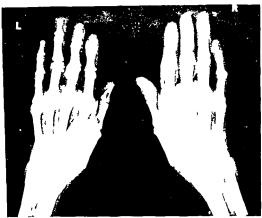


Fig e 1 Roentgenogram of bands and wrists showing destructive changes involving all of the 10 nts of the wrists and most of the foints of the fingers

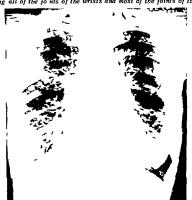


Figure 2 Koentgenogram of lung felds showing emphy sema and increased bronchovascular marki gs

anemia or eosinophilia Two or more unrelated diagnoses would be required to cover the remainder of the clinical picture

I shall digress briefly from the arthritis to some of the generalized diseases which must receive consideration Periateritis nodosa can resear many features found in this case I shall discuss only the objections to the diagnosis. The ratio of male to female parients is four to one and the usual age at onset is from 20 to 40 years. In this patient there was no peripheral neuritis muscle tendemess asisting significant hypertension or history of drug sensitivity. None of the foregoing are indispensable but in the aggregate their absence mitigates against the diagnosis.

Many of the manifestations could be seen in sarcoidosis but this di gnosis fails to explain the chronic deforming arthritis or the renal failure

Multiple myeloma must also be r jected ince the small joints of the extremities are not involved in this disease

Disseminated tuberculos s with its protean manifestations is always possibility. This diagnosis cannot be established with the information available neither can it be excluded.

Lupus erythematosus disseminata could expla n the pleur t s spleno megaly lymph denopathy w ight los f ver dyspnea edema diar thea albuminura and transl failure Joint symptoms are common Frequently the reare tendemess and swelling of several joints and rarely there are joint deformities indistinguishable from the c of rheumatod arths tis Fenales are predomin ruly afficited Among the points against this diagnoss are the negative serologic findings the age of the pattent the duration of illness and the absence of a skin rash leukopen and neurologic formalities

I believe the most likely c use of the joint m mifestations is rheuma to d arthrit's in so to of the fe tures suggestive of pouty arthritis I cannot xel de the possibility of the rare coexistence of these two diseases Rheumatoid arthritis is more common in females and in the chronic stage is often associated with marked joint deformity Spleno megaly is seen. The corneal lesion may be a part of the picture of St gren s di ease in which there may be seen punctate les ons of the comea dry skin and rheumatoid arthritis. It is most common between the ages of 40 and 65 years. The eosinophil is comp tible with theu matoid anthritis as are the marked weight loss and moderate anemia One of the most attr ct ve features of this diagnos s is that theumatoid arthritis i a recognized predisposing caus for the disease which I believe can expla n all of the nonart cular manufestations in this patient. The occurrence of a firm nontender enlarged liver and spleen together with albuminumia in a patient with one of the pred sposing diseases renders the d gno is of amyloidosis almost certain Chronic wa ting diseases particularly tuberculosis are the most common pre

disposing diseases. In numerous instances theumatoid arthritis has been implicated 3

I believe that all of this patient's manifestations can be explained by chronic rheumatoid arthritis with secondary systemic amyloidosis and a terminal progenic respiratory infection. Secondary systemic amyloidosis commonly is manifested by marked weight loss emaciation albuminuria renal failure diarrhea anemia and firm nonpainful non mon And I believe that this diagnosis can also explain the roent genographic picture interpreted as generalized pulmonary fibrosis Amyloid in the lung accumulates primarily in and about capillaries and small blood vessels. This can give a picture identical with that seen in this patient Finally I am unable to explain the serum proteins in this case. The elevated albumin and normal globulin are not compatible with my diagnoses.

Dr Gibson's diagnoses

- 1 Rheumatoid arthritis
- 2 Secondary systemic amyloidosis
- 3 Terminal respiratory infection

Doctor Boyls Diagnoses submitted by the audience are as follows rheumatoid arthritis with secondary amyloidosis glomerulonephritis periarteritis nodosa allergic pneumonitis and lung abscess Would you comment on these diagnoses especially the glomerulonephritis?

Doeto G b n Glomerulonephritis allergic pneumonitis and lung abscess would explain only a small portion of the clinical picture The other diagnoses have already been discussed in my differential

Doet r I m What additional information would you have liked to have had?

Doet Gib Certainly a Congo red test would have been very helpful One would expect that in amyloidosis of this severity the Congo red test would have been almost certainly positive. If more than 90 percent of the dye is removed from the blood stream at the end of 1 hour the rest is considered positive and diagnostic. The Congo red is taken up by the amyloid which is known to be a protein. Virchow named this material amyloid because it stained brown with iodine and he therefore presumed it was a starch.

Docto 1 mo What about liver biopsy as a diagnostic procedure?

Docto Gibs I have no personal experience. It is said to be valuable in secondary systemic amyloidosis in which the liver is usually in volved. It would probably not be of value in primary amyloidosis in which the involvement is characteristically of the tongue heart and gastrointestinal tract.

Col Milward W B yl s MC USA Ch f L bor try Servic Lt. C 1 Thom Inmon, MC USA A s man Ch ef Ca diology Set ic

- D to Amo y What is the frequency of gout?
- D + Gib The gener lly accepted figure is that gouty arthritis comprises 5 percent of arthritides
- D t T ti The use of the Congo red test is trended with se vere reactions especially when it is repeated. There are occasional deaths

PATHOLOGIC FINDINGS

D + F d II Grossly the k dn ys showed reduction in s ze and irregular thinness of the cortices Slight prominence and stiffness of the arteres on cut section was ev dent. The surfaces we e f nely gran Ir. The liver showed a markedly accentuated pattern m nif sted by gray tan marking which seemed to follow lobul r outlines. It weight ed 1450 grams which i co sidered normal The spleen showed poor distinction between red and white pulp. It was moderately firm and weighed 310 grams.

Microscop examination of the kidney (fig. 3) showed hyalinized cidophil c material within almost every glomerulu. In general the mat rial appeared to be diffuse. However, a tende cy toward spherical arrangement was present The aff tent and efferent arteriol s (f g 4) showed deposition of this acidophilic material w than their walls Util zation of the crystal vi let star showed poutrie stuning for amyloid In the k does in amylo dosis, the plomeruli are almo t always, evol ed and sometimes are the exclus ve site of the depos tion. This result in great enlargement of the glomeruli although ultimately they may shrink. The amyloid appears to be I d down in the basem in mem branes of the cap llary loop Parenchym I react on to amyleid is m nimal If the proc ss lasts I ng eno gh the f nal esult i complete fibrosis of the elomerulus Generally the affer t arterioles show the greatest involvement and the efferent arterioles are in olved only in advanced case. The Lidney tubules howed by I ne droplet degener at on M ny pathologists believe that this represents antec dent al hum nuera

Microscopic examination of the spleen showed here also deposition of amylo d within trabecular central and penicillate arteries (fig. 5). In some cases the amyloid sidero ited diffusely throughout the spleen

The drenal gland showed amyloid d position throughout

The lve (fig 6) showed deposition of amyloid within the portal blood vessels. Ge crally the amyloid material is deposited between the endoth lal cells and the liver code in this c. se however the distribution is somewhat unusual and re embles that seen in primary amylidosis in that the deposit is most marked in the larger portal blood vessel. Also it is unusual in that the liver was not inlarged

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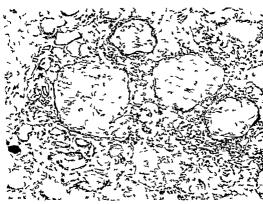
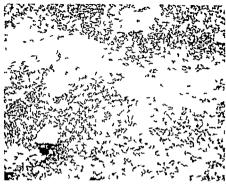


Figure 3 Photomicrograph show ng amyloid deposition u thin the glomeruli of the k dney

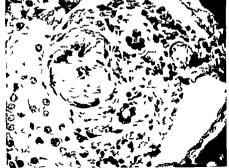


Figure 4 Photomicrograph shot: g amylo d deposition in the walls of a ter oles of the kidney

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Fgur 5 Phim crgrph how gamyl idd pitio i vas la alls



Figur 6 Pb t micr gr ph howl g amyl id depositio portal blood ve l f th liver

the walls f th

Generally amyloid deposition results in enlargement of the liver to a considerable degree Biopsy of the liver is an ideal method of proving the presence of amyloidosis * This measure should be considered when the possibility of amyloidosis arises clinically

The lung showed about the bronch; numerous subepithelial chronic inflammatory cells associated with a rather pronounced degree of hyper emia The diagnosis of chronic bronchitis was made Pulmonary fibrosis or pneumonitis was not present at autopsy. The pituitary gland showed changes like those described by Pearse? an in rheumatoid ar thritis Enlarged basophils were present with rather large granules restricted to one part of the cell The significance of this lesion is unknown Sections taken from the joints for microscopic study showed the changes of chronic theumatoid arthritis consisting of slight chronic inflammatory cell infiltration and fibrosis of synovia together with some fragmentation of cartilage. There was one zone of pannus for mat ion

In summary this case is one of secondary amyloidosis with amyloid deposition in the kidneys liver spleen and adrenals predominantly The cause of death was renal failure secondary to the amyloid con tracted kidney The most logical explanation for the cause of the amy loid change is the described rheumatoid arthritis. Amyloid deposition in the absence of suppuration has been described in this disease Renal insufficiency with consequent nitrogen retention and uremia occurs in unusual instances of the amyloid contracted kidney

Anatomic diagnoses

- 1 Secondary amyloidosis with renal insufficiency
- 2 Rheumatoid arthritis

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CASE REPORTS

Epigastric Hernia Simulating Gastrointestinal Tract Disease

FRANCIS P CATANZARO C pta USAF (MC)

PIGASTRIC hernia or hernia through the linea alba is said by Watson to account for about one percent of all hernias In the armed services however this hernia seems to be more frequent than statistics indicate A majority of patients with this variety of hernia are asymptomatic and unaware of its oxistence and diagnosis depends on careful physical examination

At this hospital during the past three years 12 epigastric hermas have been repaired During this same period a total of 96 patients with hermas of all types underwent operative procedures at this installation Although these figures are not large enough to be significant statistically they give some indication of the frequency of epigastric herma and should serve to alert the examiner to its possible presence particularly in patients with gastrointestinal symptoms. During the past year three patients gave histories suggestive of upper gastrointestinal tract disease and on physical examination were found to have epigastric herma. These hermas were repaired resulting in complete relief of symptoms in each instance.

CASE REPORTS

Cas 1 A 40 year-old surman was admitted to the h spital on 26 April 1955 for a bilateral high ligation and stripping of the long sa phenous veins. He stated that for the past 3 or 4 years he had been having repeated ep sodes of epigastric pain and bloating shortly after meals with occasional episodes of vomiting and that he frequently exper enced a burning sensation in the upper abdomen Roengenograms of the upper gastro mesti all tract had been made at another in stallation about 2 years previously and these were reported to be negative.

On physical examination a small epigastric hernia was found about 2 m above the umbilicus to the left of the median line. The hernia was about 1 2 cm in diameter and was not reducible.

Under local anesthesia a small transverse inclision was made over the hernia which was found to contain preperitorial fait of the falciform ligament The hern all ring was about 1 cm in d meter The fait was amputated and the hernial orifice closed with interrupted 000 cotton sutures. The skin was closed with inverted mattress sutures using 0000 cotton. The patient was followed postoperatively for 3 months at the end of which period he was asymptomatic eating well and gaining weight.

Case 2 This 32 year old airman had a similar history of epigastric pain and discomfort following meals with occasional bouts of nausea but no vomiting. He denied episodes of hematemesis melena weight loss or relief of pain by ingestion of food. While being followed in the outpatient department an upper gastrointestinal series was done and recorded as negative.

On physical examination he was found to have a small epigastric hernia to the left of the median line about 3 cm from the umbilicus This hernia was about 1 cm in diameter and was moderately tender to palpation

The patient was admitted to the hospital and the hernia repaired under local anesthesia using the same surgical procedure as described in case 1. The patient has been followed for 6 months and has gained 6 pounds. He has not experienced recurrence of his upper gastrointes tinal tract symptoms to date.

Case 3 This 23 year old airman while at work in the radiology de partment at this hospital suddenly experienced severe epigastric pain radiating down to the right lower quadrant and producing extreme weak ness and nausea On examination his blood pressure and pulse were within normal limits. The abdomen was soft and a small epigastric hernia was found 1 cm above the umbilious in the median line. It was extremely tender to palpation about 1.2 cm in diameter and irreducible The following morning the patient was taken to the operating room and under local anesthesia a small transverse incision was made over the hernia A small portion of preperitoneal fat was noted to protrude through a fascial ring measuring about 8 mm. in diameter With gentle tugging on the preperitoneal fat the patient complained of severe epigastric pain radiating down to the right lower quadrant and reproducing his symptoms of the morning before The preperitoneal fat was ambutated the hernial ring closed with interrupted 000 cotton sutures and the skin approximated with interrupted 0000 cotton sutures. The patient returned to work the following day He was followed for 10 months during which time he had no recurrence of epigastric pain or discomfort

DISCUSSION

Epigastric hernia is usually located above the umbilicus, to the left of the median line. Less frequently it is found in the center or just to the right of the median line. It is extremely small and its fascial ring commonly measures only 1 to 15 cm in diameter A sac is rarely found. The hernial opening may contain falciform ligament, preperitoneal fat, omentum, or, occasion ally intestinal viscera About 75 percent of the patients with epigastric hernia will have no symptoms whatsoever and diagnosis will depend on a careful physical examination A small group will present subjective symptoms referable to the upper gastrointestinal tract these symptoms may mimic the ulcer syn drome There are frequent comments in the literature concerning the association of epigastric hernia with gastric ulcer Watson reported that 25 percent of epigastric hernias with symptoms show changes in the gastric juice and Allesandrini reported that several cases demonstrated hyperacidity, lessened mobility and dilation of the stomach. It is possible to theorize from these findings that the increase in gastric acidity in epigastric hernia may predispose to the formation of gastric or duodenal ulcer However the actual coexistence of ulcer and epigastric hernia is rare, and the gastrointestinal symptoms most likely can be explained on the basis of a dragging or pulling of the umbilical ligament or orentum which is protruding through the hernial ori ligament or orivinum within is procusing among the natural free Actual incarceration or strangulation is unusual and not reported with any significant frequency in the literature Three of the patients observed here during the past year presented marked gastrointestinal symptoms as a chief complaint One other patient had no symptoms whatsoever but at the time of operation the hernia was found to have two openings through the fascia Multiple openings are not found frequently but should be looked for in every instance

STRRIARY

Three patients with epigastric hernia had marked upper gastrointestinal symptoms that disappeared after a minor surgical procedure This article has been presented to renew interest in an often overlooked surgical entity and to stress its frequent as sociation with the symptoms of upper gastrointestinal tract dis 0080

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Severe Neurocirculatory Collapse at Simulated Altitude

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JOHN J HEISLER Captain, USAF (MC)

EUROCIRCULATORY collapse at either true or simulated altitudes is not uncommon. Apparently many of the severe cases are not reported in current medical literature. The greatest number of known cases that do occur are found in physical ological training units where personnel are subjected to simulated altitudes. Most of these patients survive because of the close scrutiny provided during altitude chamber runs and the ready and immediate medical care available to the physiological training units.

When a case of neurocirculatory collapse occurs in actual flight the patient often does not survive unless early adequate medical care is provided. Unavoidably at times, such care is several or many hours away. In most cases, early medical care will prevent the patient from going from slight or moderate collapse into deeper inteversible collapse.

It is considered essential that all Air Force physicians (not only Aviation Medical Examiners and flight surgeons) and all flying personnel become thoroughly familiar with the signs, symptoms, and treatment of neurocirculatory collapse to assure early recognition and treatment Cases occurring in actual flight can be aided by crew members until a physician s services are obtained

Currently, there is much to be learned about the etiology, physiology clinical picture and treatment of this condition. The School of Aviation Wedicine has issued an excellent practical guide for treating these patients. To generalize about the man agement of these cases is not without danger. Here as in the practice of medicine generally, a physician must individualize

To our knowledge, the true cause of neurocirculatory collapse at high altitudes has not as yet been pinpointed. The consensus of medical opinion seems to be that the causative factor is usual ly an ischemic hypoxia from gaseous emboli and/or vasospasm which may be localized or generalized and which may affect any organ or parts of any organ.

ally, intestinal viscera About 75 percent of the epigastric hernia will have no symptoms whatsoev nosis will depend on a careful physical examinat group will present subjective symptoms referable pastrointestinal tract these symptoms may mimic t drome There are frequent comments in the literatur the association of epigastric hernia with gastric i reported that 25 percent of epigastric hernias w show changes in the gastric juice and Allesand that several cases demonstrated hyperacidity lesse and dilation of the stomach. It is possible to theorifindings that the increase in gastric acidity in epic may predispose to the formation of gastric or du However the actual coexistence of ulcer and epig is rare and the gastrointestinal symptoms most l explained on the basis of a dragging or pulling of ligament or omentum which is protruding through the fice Actual incarceration or strangulation is unu reported with any significant frequency in the liter of the patients observed here during the past ye marked gastrointestinal symptoms as a chief co. other patient had no symptoms whatsoever but at operation the hernia was found to have two opening fascia Multiple openings are not found frequently be looked for in every instance

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flight he felt a little fatigued and "just didn't feel well but did not report this The chamber ascent was made at a rate which gradually increased from 1 000 feet per minute to 3 000 feet per minute the peak altitude of 43 000 feet was reached at 1402 hours. Thirty seconds later the officer placed his hand to his forehead as if to indicate dizziness or discomfort then rubbed his shoulders to indicate pain. The chamber was immediately dropped and at 30 000 feet he lost consciousness and utinated involuntarily Inside the chamber the observer requested im mediate de cent used the emergency setting of the oxygen regulator on the patient and requested the immediate services of a flight sur geon At 1407 hours the patient was at ground level and semicomatose the flight surgeon put him to bed in the physiological training unit s recovery room and continued the administration of 100-percent oxygen by mask The patient complained of dizziness twitching eyelids numbness of both arms (particularly the elbows) mild generalized cephalal gia and blurring of vision

At 1410 hours the blood pressure was 150/80 mm Hg pulse 96 and respirations 18 Response to questioning was slow and the sensorium was clouded but the patient was oriented as to time and place Nys tagmoid eye movements cool and moist skin, and hyperesthesia of the forearms were present Dextran was started 28 to 30 drops per minute being given intravenously. The blood pressure fell to 110/80 mm Hg and the pulse increased to 103 Other objective and subjective signs and symptoms remained relatively unchanged. The patient was moved by litter to a hospital ward at 1500 hours where better care could be given. Oxygen and dextran were given continuously during the movement but he became very pale, began to sweat profusely, and vomited clear material. The pulse became more rapid and weak.

On admission to the hospital the blood pressure was unobtainable the pulse was weak and thready with a rate of 150 respirations were 40 and shallow skin was cool and moist and marked pillor was evident. The lungs were clear and there was no pitallysis Suprisingly, the sensorium had improved slightly. Conventional shock therapy was instituted and the response was rapid in about 5 minutes the blood pressure was 90/50 mm. Hightle 140 the respiration 30 and the skin regained normal color and temperature. Shock blocks were removed

At 1730 hours the blood pressure was stabilized at 120/70 mm Hg the pulse at 96 and the respiration at 16 Temperature was 98 6° F Examination and questioning of the patient at this time revealed dizzinness frontal headache blurting of vision paresthesia of both forearms inability to maintain visual fixation biliteral hystagmus, diminished corneal reflexes and sluggish pupillary reactions to light. The abdomen was moderately distended generally gastrointestinal gas was increased and peristalsis was normal to slightly increased At 1840 hours the patient became very restless and vomited a clear liquid material. Vom iting occurred again at 1930 hours however on this occasion the vom itus was noted to be a brown liquid.

At 2130 hours the patient became very restless and quite confused mentally. The skin of his face and neck was mortled and funduscopic examination revealed spasm of retinal anterioles and blurred disk margins. Administration of oxygen by mask was continued until 2150 hours when a tent was used Special nurses were assigned and the patient closely observed from the time of initial hospital admission with recordings every 15 minutes of blood pressure pulse temperature condition of cetera. After the 2130-hour examination a spinal flag was perf. fired and 12 ml. of spinal fluid was sloully removed. Spinal fluid pre sure was reduced from 260 mm of water to 140 mm, of water During the following 1½ hours the patient seemed much less confused mentally and less re tless. However: 1 2310 hours he became semicomatose and hyperventilation began with carpopedal spasms. The spasms were controlled by use of a paper sick over the nose and mouth for rebreathing.

Labotatory findings were as follows. The urine was cloudy and acid with a specific gravity too high to read it was negative for albumin there was a trace of sugar and of acctione. The benoplobin was 15 g ms per 100 ml the hematocrit. 54 Spinal fluid was clear with 17 cells (7 polymorphonucleocytes and 10 lymphocytes) sugar was 36 mg chlorides. 115 mg and total protein 98.7 mg all per 100 ml. An electrocarding m showed inverted T waves in le ds V. nd V. diph s c T waves in V. and V

Treatment consisted during appropriate periods of 1 000 ml of dex tran 500 ml of whole blood and 30 ml of 50 percent dextrose intra venously and vasoxyl (trand of methox mine hydrochloride) paraldehyde chloral hydrate penicillis and oxygen

O 20 March carpopedal sp m cont n ed intermittently for abour 2 hours. The p t ent became more deeply comatose and was restless and incontinent of turne. At 0830 hours his temperature was 102 2 F by rectum blood pressure was 132/84 mm. Hg pulse 134 and respirations 24 At 1030 hours he had an emesis containing old blood. The abdomen was generally distended After vomiting ceased 10 ml of spinal fluid were allowed to drain off slowly. This reduced the spinal fluid pressure from I/O mm of water to 110 mm of water A Levin tube was inserted and Wangensteen drainage started.

At 1400 hours the com became very deep the patient's pupils became fixed and contrail reflexes were absent Cheyne-Stokes tespirations began and continued intermittently for about 2 hours. The temperature increased to 104.6 F by rectum. At 1900 hours coma remained deep and response was possible only to supraorbital pressure. This response mainly consisted of movement of his left lower extremity and slight movement of his right lower extremity. The pupils were small fured and did not react to light. Corneal reflexes were absent bilaterally. A gag reflex was present and deep tendon reflexes were nin mal except for a hyperactive right pieces jerk Abdominal and

cremasteric reflexes were absent Strong Babinski Chaddock, and Oppenheim signs were present on the right the Babinski sign was weakly present on the left A right spastic hemiparesis was noted, particularly in the lower extremity

Respiratory excursions were shallow and effatic Four physicians examined the lungs by percussion auscultation, and pabation no noteworthy findings were discovered except for a deepening of the tissues over the suprasternal notch with each inspiratory effort, and a suggestion of a possible tracheal obstruction with tenacious secretions. Some laryngeal stridor was present Because of the respuratory difficulty and the critical condition of the patient, and with a view to aiding nursing care it was decided to perform a tracheotomy under local anesthesia. This was accomplished at 2200 hours. Much thick tenacious and clear mucoid material was removed by suction from the trachea and upper bronchial tree. This material was undoubtedly the main cause of the patient's respiratory difficulty because he immediately began to breathe more easily and rested much more quietly the rest of the night.

Laboratory findings were as follows. The urine was yellow hazy and acid with a specific gravity of 1040 it was negative for albumin, acetone and bile sugar was 2 plus there were 8 to 10 white blood cells and 4 to 5 epithelial cells per high power field. The red blood cell count was 5 600 000 per cu. mm. (at 0200 hours) and 4,900 000 (at 1000 hours). Hemoglobin was 16 3 grams per 100 ml (at 0200 hours), and 14 8 (at 1000 and 1500 hours). Hematocrit was 49 percent (at 1000 hours) and 46 (at 1500 hours). The white blood cell count was 20 000 per cu. mm., with 85 percent polymacphonucleocytes 12 percent lymphocytes and 3 percent monocytes (at 1000 hours) and 16700 with 87 percent polymorphonucleocytes 10 percent lymphocytes and 1 percent monocytes (at 1500 hours). The CO₂ combining power was 23 volumes percent. The spinal fluid was slightly cloudy with 21 cells (6 polymorphonucleocytes 15 lymphocytes) sugar was 26 mg. chlorides 743 mg. and total protein 183 mg. all per 100 ml.

Treatment consisted of test oxygen 500 ml of dextran 2 000 ml. of 5 percent dextrose in distilled water 100 ml of human serum al bumin, 500 ml of plasma atteptomycin penicillin paraldehyde and phenobarbiral sodium

On 21 March the patient's temperature remained fairly constant in the vicinity of 102° F (rectal) during the early morning hours and at about 101 4° F throughout the ternainder of the day By 0800 hours his coma had definitely decreased but it was not possible to arouse him completely By 0900 hours he could be aroused and answered simple questions with an affirmative nod or a negative shake of his head At 1500 hours there were the following findings slipht (red 1601 ness with moderate movements slight to moderate dealfar hose in equal pupils which reacted normally to light diminished for the court of the course

reflex absent left comeal reflex a I plus sp sm in several atteriolar segments on funduscopic examination equal and active deep tendon reflexes absent abdominal and cremisteric reflexes bilaterally equal strength in legs arms and hands Babinski reflex present on right and been ton left, and positive Chaddock and Oppenheim signs on right. The patients general condition improved streadily throughout the day and by 2000 hours he was able to answer questions in a fation al and coherent fashion. At this time both pupillary and corneal reflexes were normal. The abdominal reflexes had returned but the cremasteric reflexes temained absent. Blood pressure was 136/80 mm. Hg pulse 80 and temperature 101. F. He rested well during the night.

Lab t toty find ngs were a follows Red blood cell count was 3 900 000 hemoglobin was 145 grams (at 0800 hours) and 127 grams (at 1600 hours) both per 100 ml Hematocr t was 44 percent (at 0800 hours) and 40 percent (at 1600 hours) The white blood cell count was 12 400 per cu mm with 84 percent polymorphonucleocytes and 16 percent lymphocytes The CO combining power w 28 volumes per cent

Treatment cons sted of 1000 ml of plasma 3000 ml of 5 percent dextrose in distilled w ter streptomycin penicillin and multivitamins

On 22 M tch the patient condition ws much imprived he was able to take liquid and a soft diet. The only positive findings remaining wite a slight ment I dull es with some difficulty in memory for recent events. lightly diminished visual acuty blocatelly and slight less strength in the intri lower externity as compared to the left.

Improvemen was rap d nd all eurologic findings and vision were normal by 25 March Convalescence w une entful and the patient was d charged to d ty (not involving flying) on 12 April On 16 April he was returned to flying with instructions to temain at all tude of 20 000 feet or less

DISCUSSION

The advisability of spinal punctures in cases of neurocircu latory collapse is debatable. Some neurosurgeons are convinced that spinal punctures should never be performed in this condition whereas others are just as strongly convinced that the procedure should be done. In a case previously reported performance of a spinal puncture with slow release of spinal fluid markedly improved the patient and seemed to be the lifesaving therapeutic procedure. In the case reported above improvement was only temporary but definite for short periods however spinal puncture may have contributed to the later regression of the patient. Spinal puncture was not performed in any of the seven fatal cases described by 'diler. He emphasized that, although it may have been coincidental several patients in his report improved clini

cally soon after spinal two Decision as to whether or not to perform spinal puncture where research the individual physician Until more positive proof is obtained indicating that such procedures are precluded, we will continue to lean toward using careful spinal punctures

In retrospect, it may have been better in this instance not to have moved the patient from the emergency room of the physic logical training unit so soon. However, it was decided to move the patient to the hospital because better care could be afforded him there than was possible in a small, crowded emergency room

It is extremel, important that fluids given intravenously be administered at a very slow rate to prevent sudden pulmonary edema, cerebral edema, or overtaxing of an already overloaded cardiovascular system

This case well demonstrates the rapidity with which changes in the patient's condition can occur, and stresses the need for constant close medical observation. The initially increased total white blood cell count with increased polymorphonucleocytes and the initially increased spinal fluid pressure, the persistence of spinal fluid cells, the persistently elevated spinal proteins, and the decreased spinal fluid sugar can easily confuse the diagnosis and suggest one of the meningitides or other central nervous system infections, unless the physician obtains a good history and is familiar with the neurocirculatory collapse syndrome. It is stressed that some patients may exhibit no symptoms or only slight symptoms until several hours after a flight is completed. The initial hemoconcentration in this case may be related to the blood studging described by Anisoly and Bloch.

The decreased CO, combining power probably reflects the severity of the patient's shock, although in this case one might have expected an increase in the CO, combining power in view of the marked hyperventilation that was noted even while the patient was comatose or semicomatose. The exact reason for the patient s hematemesis was unknown. There are many possible causative factors which will not be discussed here

The turning point for improvement in this patient -pparently was the tracheotomy

Immediately after the above incident it was decided to obtain more information on all trainees prior to chamber ascents. As a result a combined physical examination questionnaire form vas prepared for recording the trainee's name, age, height, weight, pulse, temperature blood pressure, et ceters. All pe sonnel assigned to the physiological training unit were given special instructions in the methods of obtaining this inforce from L. 2005.

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obligatory that the trained himself complete the form with information concerning previously experienced symptoms during actual or simulated flights to high altitudes past history of headaches or fainting or emotional disturbances, any feeling of present fatigue or illness (cold sore throat sinusitis ear defects, fever diarrhea et cetera) history of recent immunizations use of alcoholic beverages physical defect waivers et cetera Any trainees 35 years of age or over those overweight, and those indicating by our physical findings or by their answers that their case should be further investigated are interviewed personally by the physiological training officer who records appropriate comments on the form The trainee is then interviewed by a flight surgeon who makes the final determination as to whether a flight should be undertaken. This procedure has considerably reduced the number of chamber reactions in the 14 months since use of the form was initiated, no serious reaction has occurred locally dunne simulated flights

Further research study and reporting of neurocirculatory collanse cases by the medical profession is believed indicated to afford more information in regard to the causes clinical picture and therapy of this syndrome

SUMMARY

In a case of neurocirculatory collapse resulting from simulated altitude flight many bizarre neurologic and circulatory signs and symptoms were noted. The patient also demonstrated the rapidity with which clinical improvement can change Therapy consisted primarily of close observation and conservative medical care however two spinal punctures and a tracheotomy were also performed. The spinal punctures only temporarily aided the patient however the tracheotomy marked the turning point toward improve ment and eventual recovery Use of a locally prepared combined physical examination questionnaire form has considerably reduced the number of chamber reactions and no serious reactions during simulated flights have occurred in the 14 months since use of the form was initiated

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Primary Carcinoma of the Jejunum With Massive Gastrointestinal Hemorrhage

TIMOTHY N CARIS Captain, USAF (MC)
BRUNO EISEN Captain, MC USA
CLESTON W GILPATRICK Major MC USA

RIMARY carcinoma of the jejunum is uncommon, but this site is the most frequent one for carcinoma of the small intestine In 1940, after a survey of cases for 32 years, 108 malignant tumors of the small intestine were reported by the Mayo Clinic.

Massive gastrointestinal hemorrhage as the presenting symp tom of caranoma of the lejunum is sufficiently rare to justify the report of a single case

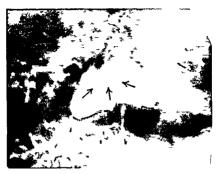
CASE REPORT

The patient a 21 year-old man sought medical attention because of progressive and easy fatigability and marked weakness for the preceding 12 hours. The patient had not felt well for the previous 4 months because of nervousness and easy fatigability.

The history by systems was noncontributory except for occasional butning in the epigastrium. These episodes were infrequent not related to nor modified by the ingestion of food. There was no history of nau sea, vomiting hematemesis and tarry or bloody stools. Physical examination texealed an apprehensive pale afebrile white man with a pulse rate of 110 per minute and a blood pressure of 110/70 mm. Hg. The remainder of the examination revealed no significant abnormality except for blood on the examination funger following rectal examination.

Within 1 hour after admission to the hospital the patient had a large bloody bowel movement. Sigmoidoscopic examination revealed no bleed ing sites but blood could be seen coming from above the end of the sigmoidoscope. A gastrointestinal series performed 12 hours after admission revealed considerable spasm of the pylorus. The duodenal bulb did not fill until 15 to 20 minutes after the ingestion of the barium then it was irritable and empired frequently except for a speck of barium on the midportion of the posterior wall. On all spot films a persist ent rounded patch of barium with a radiolucent ring (thought to be due to edema) was seen (figs. 1 and 2). The remainder of the upper gastro intestinal tract was thought to be normal.

Fr m Brooke Army Ho p t l Brook Army Medic l Cent r Fort Sam Houston T x



Figur IA: pite v w fibed denalblb d mo training the sim lat d le cir^{*} fill d wib b m m a d th m und g add i t zone tho ght t b d mato m g l t m



Fg 2. Rght tri blqu seu fth duodenalb lb d mo t t g the bar um-filled cr ter a d seround g zo f adiol cency

September 1955)

On admission the patient's hemoglobin was 10.7 grams per 100 ml with a hematocrit of 32 percent. He received 1.500 ml of whole blood in the next 36 hours, and during this time he had three additional bloody bowel movements. The patient's pulse rate remained persistently over 110 with a blood pressure of 100 mm. Hg systolic Even after receiving the blood the patient's hemoglobin was found to be 10.7 grams per 100 ml with a hematocrit of 33 percent. It was believed at this time that the patient had a persistently bleeding duodenal ulcer and that surgical intervention was indicated.



Figure 3 Photomicrog aph of jejural mucosa adjacent to the polypod tumor base. The base of the jejural mucosa can be seen with the underlying muscular s mucosa. In the submucosa there are glands of tumo cells invading laterally from the base of the polypoid tumo (× 105)

A bilateral subcostal incision was used for exploration. On entering the peritoneal cavity blood was seen within the small and large bowel. Examination of the small bowel at the ligament of Treitz, however failed to show blood in this area. An intraluminal tumor was encountered about 18 inches distal to the ligament. The small bowel was opened away from the tumor and examination revealed an adenomatous polyp measuring 5 cm in diameter. Two areas of ulceration measuring 4 to 5 mm in diameter were adjacent to the mass. These were definitely identified as the site of bleeding. The small bowel was resected taking about 5 inches on both sides of the tumor and an end to-end anastomosis was performed.

Because of the clinical and radiologic diagnosis of duodenal ulcer a duodenotomy was performed. No abnormality could be detected visu ally or by palpation and the duodenum was closed. The abdominal wall was closed in layers and he patient made an uneventful postoperative recovery

Pathologic studies showed the tumor to be adenocarcinoma of the retunum without lymph node involvement (fig. 3)

A repeat upper gastrointestinal series 1 month postoperatively showed no abnormalities

SUMMARY

Gastrointestinal bleeding in a young man was diagnosed clini cally (and confirmed radiologically) as a bleeding duodenal ulcer In spite of therapy the patient continued to bleed and a laparotomy was performed At the time of operation the duodenum was found to be normal and a polypoid adenocarinoma encounter ed in the leiunum about 18 inches from the ligament of Treitz was resected

REFERENCE

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THE AIR WAY IN ACUTE HEAD INJURY

The occurrence of concomit t chest injuries among p tients suf fering from head tr um further incre ses the mortal ty r te Tacheostomy has been shown to have defint therapeut c eff cts in thi group a mechanical cle using of the irw y by e sy removal of x cessive fluds or blood from the tr cheobronchi l tree well as relief of laryngeal obstruction from edem bleeding or fulty function of the vocal cord and a physiological dec ea e in the amount of dead pace in the re pir tory tr ct nd a dimin shed resistance to beathing Furthermore tracheostomy has the advantage of being a well toler ted impl and ingle procedure It is direct and definitive Less e per enced ward help c n take over aspiration nd m nagement of the oxygen catheter and alcoholic intactable and severely niured p tients are most e silv managed in th s man t

> -ALEX W ULIN M D d HUBERT L ROSOMOFF M D AMAAb of Sery p 760 N 1953

A MESSAGE FROM THE A M A

Less than 60 hours before the Doctor Draft Law would expire, Congress sent the bill to extend this law for 2 more years to the White House for signature On 30 June at 7 10 p m, the Presi dent signed the bill which became Public Law 118,84th Congress

The continuation of this special draft law, as amended and extended, retains the same four priorities for the call up of physicians to active duty as was contained in the old law. The Doctor Draft remains in effect for 2 more years or until 1 July 1957. In addition, the \$100 per month equalization pay for physicians, dentists, and others on active military duty was continued for 4 more years or until 1 July 1959. The new law provides only two major changes from the old act. First, it exempts from military service any physician or dentist, 35 years of age or older, whose application for a commission in one of the armed services as a physician or dentist is or has been rejected on the sole ground of a physical disqualification. Secondly, the age limit for call up of special registrants was lowered from 51 to 46 After 1 July, all physicians who have reached their forty sixth birthday are exempt from involuntary induction into the Armed Forces.

It should be noted that these two changes are not retroactive Physicians already on active duty prior to 1 July are not eligible for discharge even though they would be exempt from in duction under the recently enacted changes. Such individuals must serve their obligated tours of duty as provided for in the provisions of the old law. The Department of Defense also emphasized that those persons who were merely classified 4-F by their draft boards likewise would not be affected by the new amend ment. Only those persons who applied for a commission as a medical or dental officer in one of the armed services and were rejected on physical grounds would be exempt

The American Medical Association actively opposed the continuation of this highly discriminatory law. The Doctor Draft Act extension originally introduced as H R 6057, 84th Congress, was favorably reported by the House Armed Services Committee after hearings had been conducted Approval was withheld by the House Rules Committee until further justification for the extension was presented by the Armed Services Committee.

From the C uncil. A trivial Defins of the Amirian M dical As occasive. The v w and p is an expressed are not excess an ly those of the Department of Definse $\frac{-Ed}{2}$ to

The Sonate then added the Doctor Draft as a separate title to the regular draft bill for a 4 year extension of the Universal Military Training and Service Act which was passed by the House in February This combined bill (H R 3005) was passed by the Sonate on 16 June

However there were several major and some minor differences between the House version of the bill which dealt solely with the regular draft and the Senate bill which included the Doctor Draft extension with the regular draft provisions

A Conference Committee of House and Senate members was appointed to resolve these differences. The Conference report was called up for House action on 28 June

It is significant to realize that the procedure up to this point was to tie in the Doctor Draft extension with the vital extension of the regular draft and on the basis of a Conference report to force a vote on the bill without consideration debate and amend ments under the usual rules and practices of the House of Rep resentatives.

To prevent this action after the Conference report was called up for House consideration a motion was introduced to recommit the bill to the Conference Committee. This motion was defeated by a vote of 221 to 171

Following this the House then voted 388 to 5 to accept the Conference report which in effect passed the act. Shortly thereafter the Senate passed, without opposition the compromise meas ure as agreed upon by House and Senate confereos

In its testimony before the Senate Armed Services Committee the American Medical Association pointed out that The provision of an adequate career medical officer procurement program for the Armed Forces is the problem that must be solved today Continuation of the Doctor Draft will not solve this problem but it has apparently become easier to postpone a solution by convincing Congress every two years that the law should be extended than to solve the basic problem involved

It is gratifying to report that during the latter part of July the Department of Defense called a conference between representatives of the Military the medical profession and the dental profession for the purpose of outlining an attractive career program to resolve this vital and acute problem The American Medical Association has long been on record as endorsing the principles of such a program and sincerely hopes that implementing legis lation can be passed without delay.

PROMOTIONS OF OFFICERS

The following officers of the military medical services on active duty in the Army, Navy, and Air Force have recently received temporary promotions to the rank indicated

Medical Corps

Ge g C Ald ma Lt USN
K nneth Z Alt huler Lt USN
K nneth Z Alt huler Lt USN
Multam H Baud Lt USN
William H Baud Lt USN
Ortha J Ba rt Lt USN
J ck B brea Lt USN
J ck B brea Lt USN
Arthur Brody Lt USN
Ort C. B ax Maj USA
Do M Burma Lt USN
Cal H Cart jr Lt USN
H ary S Cart Lt USN
Do M Burma Lt USN
Sme J P Cop land jr Lt USN
L osard J Corw Lt USN
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All T Mo Lt USN
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All T Mo Lt USN
P uf F ra Lt USN J h W Co Lt. USN Frak R D xh m t Lt USN Phip R Dodg Maj USA k no th V D l Lt USN L mad D loff Lt USN R be t A Ea tw d Lt USN
Mead C Edmud Jr Lt USN
Charl W Ehl III Lt USN Le W Elg n J Lt USN
Le W Elg n J Lt USN
Ira I Elta ph Lt USN
Irv ng P E y Lt USN Arms d F dul Lt USN Laur ac H. F astra Lt USN Lest M. Felt J Lt USN Eugen M F1 t Lt USN Arthur J J bus Le USN
R sold J J Lt USN

Pul F N m Lt USA Edw rd M Ornitz Lt USN Edw rd M Orner Lt USN
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Phano L P J Lt USN
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R wrd a E Rambo Lt USN
R hard J Schill ag Lt USN
R hard J Schill ag Lt USN
R bard J Schoot Lt USN
Edwa d C Sinnott Lt USN
R bard A Guth I. USN Edwa d C Sinnon: Lt USN
R bert A Smith Lt USN
J hn F Sode str m Lt USN
J ph H S phens Lt USN
Be jamin C Ste ns Jr Lt USN
W od ll A Stim ts Lt USN Lest M. Felt J. L. USN

Gl. aA Folmsb. Lt. USN

Gl. aA Folmsb. Lt. USN

Gl. aA Folmsb. Lt. USN

Henry E. Goetz. Lt. USN

Henry E. Goetz. Lt. USN

Frank A Hamilt. Jr. Lt. USN

Ge. R. Hayt. Lt. USN

Ge. R. Hayt. Lt. USN

Donald G. H. Igr. Lt. USN

Tham N. H. Il. J. Lt. USN

Tham K. H. Il. J. Lt. USN

J. B. W. The Lt. USN

Thinm A. H. Il. J. Lt. USN

Thinm A. J. L. USN

Arthar J. J. B. U. USN

Arthar J. J. B. U. USN

Arthar J. J. Lt. USN

Roald J. J. Lt. USN

Mist W. Iff a. Il. L. USN

Mist W. Iff a. Il. L. USN

Mist W. Iff a. Il. L. USN

Mist W. Iff a. Il. L. USN

Dental Corps

J h H Abercromb Capt. USAF J h A Babett Capt USAF J ck Badner Lt USN Raymod C. B a Cap USAF

Dental Corps-Continued

Dental Corps—Continued

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God H Bk II L USA
Jee J Bow Cop USAF
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Anth B w L USN
Mart M B w L USN
Mart M B w L USN
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F d W B ne Cap USAF
F d W B ne Cap USAF
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E J Golling Cap USAF
Them C Chas L USN
The L USN
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L R seem M k J b H B l Maj USA

Rod y W Ma h Cap USAF God K Mag us L USN

Medical Service Corps

Medical Service Corps-Continued

Marvi B Flibr Ist Lt USAF Willam C Ford Maj USAF I cob R F ma Maj USA Edw rd Ha Ir 1st Lt USAF PhipE Hix n I tht USAF H lbert J H pp r 1st Lt USAF L IS R Kaufma Lt USN William R K owl Capt USA Ke th C Krug r 1 t Lt USAF D mald V McEvov 1 t Lt USA Danil J Mone 1 1st Lt USAF Charl G My r 1st Lt USAF Maurice W Nich ! Maj USA Raymod J O B e Maj USA Schuyler C Pat ck 1st Lt USAF Solomon C Pfl gg Lt USN

J mes J Riccard Mai USA
J m T R cha d Col USA
William S R ey Maj USA
Joh P Samu I Maj USA
Joh P Samu I Maj USA
Rob rt W Sch ider Ist Lt USAF
Edw rd M S right I st Lt USAF
Edw rd M S right I st Lt USAF
Fra klin H Snapp I t.Lt USAF
Frank Spasano Maj USA
The d e Siergad Maj USA
The d e Siergad Maj USA
Donald E Still Lt USAF
Rahb A Trimble Ist Lt USAF
R b rt E T rtl I t.Lt USAF
H w rd Wills Maj USA
R cha d H Zye k Ist Lt USAF

Nurse Corps

Twila R Ad ms 1 t Lt USAF Carly T Andr 1st Lt USAF V la L A dus Lt USN Els e M Atmst g Capt USAF G wa Asc tt 1 t Lt USAF Hel C Bailey Capt USAF Mar ly] B am 1 t Lt USAF
Cal pe M Bel z Lt USN
Margery E B t ld Capt USAF Joan M Bevans 1st Lt USAF Eli beth A Bir lili USAF J tLBesltLt USAF Delrs L Bown 1st Lt USAF Clus By Lt USN Babara J Carp t Lt USN Mar F Chittick Lt USN Kathen P C l ma lst Lt USAF A B Co Lt USN Am lia M Dalma o Lt USN Ma tha A Deks Capt USAF Al L Dwing 1st Lt USAF Ell n E D k Lt USN A mab II W Evans Capt USAF El zab th L Eva Lt USN FI F F tak Maj USAF Mid d A F h Capt USAF H I e M Gir d Maj USAF Cather ne M. Gly Lt USN El or F Grav Il Capt USAF Alb ma I G : Lt USN Aldona M Gr z Lt USN Elea T Haly Lt USN Drthy J Hans Lt USN Ma garet C H ffman Capt USAF Hazel L. H gan Lt USN Aile R Hott ng i Ist Lt USAF Harett E H mm l 1st Lt USAF Elizabeth A J bluno ky Capt USAF

K thle V Ke edy Capt USAF Ros A Ki h Lt USN Babara E Kn 1st Lt USAF P lin J K nz Lt USN Kathle M Laughl Lt USN Geraldi e M L han 1st Lt USAF Babara 1 L new 11 1 t Lt USAF Gl dy Mads n Lt USN Dolor s M McA y 1st Lt USAF Mayd M McO k y Capt USAF Ida J No en i t Lt USAF Mary GOD II Ist Lt USAF N ma E P m Ist Lt USAF Ie A P n ell I t Lt USAF L tta V Pete n lst Lt USAF N ra J P ttuz lst Lt USAF Mary R Philip 1 tLt USAF Ruth M Poj ky Lt USN Consta c A Quin 1 t Lt USAF Joh na R id Lt USN Elzab th A R chad Lt USN D t thy A R stoff Lt USN Martha C. R Capt USAF C to e H R we Lt USN Do thy L Schw gr Lt USN J T Seals 1 t Lt USAF May S St hlma Lt USN M y G St w t Lt USN Ann B Strank Lt USN Jim P Trv r 1 t Lt USAF U mla E F Trapp Lt USN M to E W ne Lt USN Dor thy V Wetz 1 Capt USAF Laura C Whe I r Lt USN Jud th E Wills mson Capt USAF Bla h E Vodka I i Li USAF R ta G W burgh 1st Lt USAF

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NEW NAVAL HOSPITAL ON GUAM

On 2 November 1954 the new 14 5 million dollar U S Naval Hospital on Guam Marianas Islands was dedicated Situated on a 137 acre plot on Agana Heights this beautiful ultra modern hospital has facil titles for 500 beds The staff consisting of 68 officers 218 enlisted men and 100 civilians furnishes complete medical surgical and



dental care to military personnel dependents and fleet activities Over 160 miles of wire and 38 000 tons of concrete were used in construction. This new medical facility is the second largest naval in stallation outside the Continental United States.

Quite as a sidelight to the construction of the Naval Hospital was the setting of a lock safe in concrete before it was found that no one had the combination After all local experts failed in opening the safe a Navy inspector sat down turned his hearing aid to full volume and dropped the tumblers by ear

People are different from one another and when they are sick they are even different from themselves

Reviews of Recent Books

ANTISERA TOXOIDS VACCINES AND TUBERCULINS IN PROPHYLAXIS
AND TREATMENT by H J Part F M D 3d dt 227 p g llu
t td Th Wilsum d Wilk Co B ltmore Md 1954 Pr \$5.

The words bacterial and virus diseases which ppeared in the title of the first two ed trons of this small book have been deleted from the present edition. The subject meter however continues to cover the basic principles of immunology in their practical application to the tree tment and prejent on of disease. Throughout the text, difference in practice between Great Britain and the United States are described increasing the value of the book.

The volume is d vided into three sections, the first of which is devoted to serology immunity and a review of basic immunology. Brief discussions of the var ous types of antisera comprise the second sec tion Method of preparat on of the items avail ble and the use of ach n prophylaxis and t eatme t is presented in clear outli e form. The third sect on comprises more than o e half of the book and is devoted to a de criot on of products variable for diagnosis such as tuberculin and Sch ck test toxo d and also those used f r active immunization against disease Controversial material is kept to a min mum and the author's emphasi is on a practical clinical approach. For ex mple he points out the need for us ng only certa n syringes for each dilution of the M ntoux test because of the g eat diff culty in removing tr ces of tuberculin by usual ster lizat on procedures. A historical outline of dates mport nt in serum therapy nd mmunizations conclud the book which can be wholehe redly recommended f r physician in general or crice and prevent e medicine -- WARREN H. DIESSNER Cal MC USA

DIAGNOSTIC ADVANCES IN GASTROINTESTINAL ROENTGENOLOGY by Anthur J Bend & M D 144 page 75 liustratic as Grun & Stratton In N w York N Y 1934 Pr e \$6

This I title book is intended for those radiologists and gastroenter ologists who have been performing roentgenog pluc examinations for several years yet are so situated that they cannot keep up with new technics and modern interpretations of roentgen fundings. The author cover advances in roentgenologic equipment and preparation of commists media. He gives considerable emphasis to detailed study of the microsal particularly the club soda technic which was developed by the author. This utilizes small amounts of cedic rhonated water for hyperpretastlass and distenting the stomach.

The material is well organized concise and read ble Examination of the various port one of the gastrointe tin I tract is covered in some

detail Both sides of controversial points are not reviewed in detail, but rather the author gives his own opinions based on years of experi

The book is well indexed and beautifully illustrated with 75 roent genograms which bring out the points emphasized in the text. Bibli ographic references have been generally omitted in order not to increase the size of the book—JOHN L. HATCH, Capt. (MC) USN

A COMPREHENSIVE REVIEW OF DENTISTRY For Use in Preparing for State
Board Licensing Examinations edited by Vincent R Trapox-ano
D D S F A D P with the collaboration of 24 contributors 2d
edition 665 pages W B Saunders Co Philadelphia Pa 1955

This volume is presented with a twofold purpose first to serve as a guide for the Dental State Board examinee and second to aid in the review of dentistry by the general practitioner

All of the basic sciences of the dental curriculum are covered including operative dentistry prosthodontics oral surgery orthodontics roentgenology and related topics. The material is arranged in a question and answer format without detailed descriptions of technical procedures. Each chapter has been compiled by a recognized specialist in the field and there is a short bibliography at the end of each chapter. The material is well indexed.

The author's twofold objectives are adequately accomplished and within the limitations of these objectives this book can be recommended as an addition to the library of a prospective examinee or general practitioner—EDWIN H SMITH 1 LL Col. DC USA

COLLECTED PAPERS OF THE MAYO CLINIC and The Mayo Foundation edit do y Richard M Hewitt M A M D A B Nevling M D John R Mine Sc D Jam s R Eckman M A Ph D M Katherine Smith B A Ca I M. Gambill M D M P H Florence Schmidt B S E and George G Stifu ll M D Volume XLV 1953 published June 1954 913 pages illustrated W B Saunders Co Philadelphia Pa 1954

Practical useful knowledge given in succinct readily understandable prose describes the style in which this 913 page volume is written This book reads like the best of clinical lectures Statistics are held to a minimum and individual case records do not appear Problems are posed on every textual page their number making the book a small encyclopedia of up to-date freshness Problems even out of the average practitioners is field are presented without going over his head

This is a book the busy physician may read hurriedly between cases or digest more thoroughly and with comfort at the day's end. The editors have quite uniformly captured in print a style of presentation of problems characteristic of the direct analytic approach of the best clinics. New unusual difficult or even ordinary problems are so interestingly presented as to make their solution seem easier for having read this text—#ILLIAUW KIRR, Capt. (MC) USY

ANGIOGRAPHIC LOCALIZATION OF INTRACRANIAL MASSES by A thur Eck M D Ph D d P l A R m b td M D 433 pag Il trat d Ch l C Th mas Publi b Spr gf ld ill 1955 P \$13.50

This monograph is designed to serve as a much needed reference arias for the localization of intracranial masses by the study of the di placement of the cerebral vessels as seen in the contrast angiogram

It is divided into two parts the first being composed of line draw ings and general description of the material or ming the reader to the position of vessels when displaced by masses in 27 specific te gions of the brain. The second p rt consists of 27 chapters each illus trating one of these regions by ang ograms. Also presented are cor relating clin c l histories add tional illustrations photographs of pat ents plain films preumograms and pictures of surgical expo ures and of pathologic pecimens

The ability to local ze intracrani I masses can be greatly enhanced by the study of angiography Its correlation with the clinical and pneumographic studies is especi lly important and is well illustrated in this book. By is use certain berniations can be excluded and subsequent pneumography and lumbar puncture may be performed with greater s fety Informati n may also be gained preoperatively by the neurosurgeon serving to localize the tumor mor accurately in ad dition t times a clearly inoperable tumor may be recognized

This book is valuable addition to our growing reference I brary in the highly specialized but important field of contrast radiography. It is ecommended for II who would ext and their knowledge in this direction -S F WILLIAMS CAPI (MC) USN

REFLECTIONS ON RENAL FUNCTION by j me R Rob nson, M D Ph D
163 page Il trat d Ch le C Thom P bl h Spr gl eld Ill
1954 P c \$3.50

This small book emphasizes the ormal physiology of the kidney and gives a summary of known physiologic chemical and endocrine principles involved in renal function. There is a splendid bibliography of 112 references

A chapter is devoted to water a d sedium excretion a d an explan ation of how the k dney elaborates hypertonic and hypotonic urine The role of the k dney in acid base balance i covered in detail with di cussion of h w and wh n the urine is alkaline or acid. The role of the k dney as a regulator of the volume of the body fluids is care fully described. A great deal of information is centered on the kinetics and limitations of the k dney but many secrets of its intimate mechan isms are yet to be reveal d

This book will be useful to physiologi to physicians interested in basic sei nees and t idents in trai ing in wology

LEGG-CALVÉ PERTHES SYNDROVE and Related Osteochondroses of Youth by Charles Weer Goff M D 332 pages illustrated Charles C Thomas Publisher Springfield III 1954 Price \$10.75

The author has successfully written a monograph summarizing all present day knowledge of a clinical condition challenging to the physician and a rather common cause of residual disability in the adult. He also has faithfully and scientifically recorded his own experiences in the treatment of this condition and proposes a concrete plan for treating osteochondrosis with enteria of healing which will be helpful to other physicians

The first portion of the book records the history of Legg Calve-Perthes syndrome with an account of the nature possible causes clinical manifestations and treatment of this condition. In a section on the hip the normal and abnormal physiology of this joint and the pathology of this ill defined disease is described. A portion of the book devoted to excellent reproductions of toentgenograms clearly illustrate typical cases. These are compared with roentgenograms of conditions which simulate Legg-Calve-Perthes disease and will be of help in their differential diagnosis. Of interest is the tabulation of osteochondroses of various portions of the skeleton where confusion in diagnosis has existed.

Many references are listed which will assist those desiring to do further reading on the subject All illustrations graphs and reproductions are excellent. The index is complete with bold pint designating each letter of the alphabet.

This work representing exhaustive research and scientific recording will be an asset to the physician especially the pediatrician and ortho pedist treating patients with these conditions. This effort should aid an earlier diagnosis and prevention of deformities it will give physicians a clearer understanding of a plan for treatment which has heretofore been confusing and varied —ALFRED O HELDOBLER, May MC USA

INTELLIGENCE by L J Bischof 33 page illustrated Doubleday and Co Inc Garden City N Y June 1954 Price \$0 85

Since the first practical success by Alfred Binet in the measurement of intelligence the notion of what is and what can be measured by tests has had considerable development and modification. This pamphlet reviews the theories associated with the names of Stern Spearman, Thomson Thorndike and Thurstone What is measured by tests of primary mental abilities is illustrated by copious examples of the sorts of tasks and problems included in the recent intelligence tests. The abilities assessed such as word fluency verbal meaning perceptual speed space and memory are defined with actual examples from tests. This work includes little for the psychologist that is new but is recommended reading for the medical or line officer who has interest in or responsibility for assessment programs.

THE JOINTS OF THE EXTREMITIES ARM d graph c Study N to on N a t M thod Non ti Id d L -c mm P th l gy by R ymo d W Lew M D 108 pag II trated Ch l C Th m P bl h r Sp gt ld III 1955 P 38 50

This text was prepared especially for radiologists and orthoped c surgeons. No attempt was m de to cover the fundamentals of x ray diagnosis completely in tead unusul ideas and less common ds ease as te re emphas zed. Nontoutine positions are described and examples given to show their value.

The a thor believes that complete examination of the plain film using var ous projections will en ble one to detect small deviations from the n rmal. Throughout the tx the urges the detailed study of the soft tissues about the various joi ts. Routine films taken for boe det il are usually satisf ctory for soft tissue study with use of a spot light. The chapter on the knee is the most detailed one and well ill strates the importance of careful examination of the soft tissues on ill films. Excellent examples of syno tis cellul tis pigmented vilonodular synonytis and synonyom give shown

The bo k is well written and easy to read with 102 illustrations of radiogr phs to illustrate the text. Most of these are accompanied by drawings or sketches to illustrate the an tomy and p thology. The index deq ately covers the subject matter.

This study should prove valuable to all physicians concerned with interpretation of radiopriphs of the joints

-JOHN M. KOHL, Maj USAF (MC)

ANTIMICROBIAL THERAPY IN MEDICAL PRACTICE by H m nF Fl pp
M D F A C P nd G org M E b g D S 304 pg 11
tabl d th peut d F A Da C Phl d lph P 1955
P \$5

This volume contain a thorogh and pr circal coverage of a timerob al the apy It s a timely book which is rem ricably up to dat in a field that is notable for r pid developments. The authors reem nently q alified by virtue of vast clinic lexperience to eviluate the nereous ant merob ali agents that he even eight clinical use since the advent of this form of therapy.

The many antim crobial drugs are ind vidually discussed as to mode of action pharmacology d sage to icology therapeuric indications and contr indicat os. The 1 bor tory aspects and complicitions of antimicrobial therapy are presented by effivient adeq atchy

The greater portion of the book is devoted to the treatment of specific infectious diseas. The various antimicrobic agents used in each of these cond tons are discussed cle rly and in detail. The authors have succeeded in crystallizing current thinking r garding the rel tive v lue of the e gents in the various infect; a diseases and have produced a practical book that should b most useful in the everyday practice of medicine—CORGE M. FORELL CO. IKC 15A.

METABOLIC INTERRELATIONS WITH SPECIAL REFERENCE TO CALCIUM edited by Edward C Reifenste n fr 386 pages illustrated Sponsored by Josiah Macy Jr Foundation New York N Y 1954 Printed by Progress Associates Inc Caldwell N J Price \$5

This book reports another Josiah Macy Jr Foundation Conference designed to assemble outstanding medical investigators for the purpose of informally integrating their personal ideas experiences data and methods in the field of medicine On this occasion the subject of calcium phosphorus metabolism was chosen to further knowledge in metabolic interrelations

Twenty seven participants presented papers dealing with general aspects of internal transport of the mineral ions concerned with calcified tissues Biochemical and physiologic aspects of calcium phosphorus metabolism in research as well as in human diseases of the skeleton are correlated by informal participation of the many members. The significance of calcium phosphorus vitamin D partitormone, citrate renal function and chelating agents in the pathophysiology of diseases of the skeleton are discussed bringing up to date the metabolic interrelationship of these mineral ions with disease. of bone The book is freely documented with tables graphs, diagrams, and photomicrographs of bone

This publication is an up to-date review of the metabolic aspect of calcium metabolism as related to disease of bone. It will be best utilized by the internist endocrinologist and orthopedic surgeon

-ANTON ZIKMUND Capt (MC) USN

ABDOMINAL OPERATIONS by Rodney Mangot F R C S with contribution by 24 Am rican and British Authorities 3d edition 1 5/8 page 1 594 illustrations on 738 figures 11 color plates Appleton Century-Crofts Inc N w York N Y 1955 Price \$24 50

In this new edition of a standard text on surgery of the abdomen the scope of the two previous editions has been extended by the addition of 11 new chapters while 63 have been revised Adequate and annotated descriptions are given of abdominal operations of general surgery in cluding seven chapters on special subjects such as diaphragmatic hernia portal hypertension pelvic exenteration chest complications, and fluid balance

Contributions in various fields by American and British authorities lend additional value to this work Illustrations of technic are numerous and precise Discussions of biliary and gastric surgery are excellent in their coverage and the malformations and congenital anoralies often encountered in general surgery have been included

An ample author index and subject index are provided. The exten 17 and current bibliography appears as part of the text and does not crattribute to a smooth style but presents readily available references f wider reading. The volume is organized well and written concest [i.w.il] be a valuable aid to the experienced as well as to the less 7 perienced surgeon—ROBERT L. RUEA J. Col. KC USA.

1390

STANDARD METHODS FOR THE EXAMINATION OF WATER SERAGE AND INDUSTRIAL WASTES P ps d d published and the pseudon of the public H is A ocean a Am rice. W: Work A ocean for t if S w g & Ind urish W: t A ocean look did no 522 pages II urish Publication Offic Am a P bi H lith A so i t I N w York N Y 1955 P c 5750

The tenth edition commemorates the fiftieth anniversary of th publication of the original volume. During the 50 years that have elapsed this book has become the standard text for civil an and military labor atories throughout the United St tes. The changes and additions in the present edition are more extensive than in any previous revision and there is considerable added information of particular interest to the military.

New m terial on the physical and chemical examination of water includes sections on correctness of analysis statistics amperometric titration and Palin methods for chlorine and Megregian-Majer and Lamar methods for fluorine Under physical and chemical examination of sewage sections on precision and accuracy and a discussion of methods evaluation have been added in addition to the three methods for dissolved oxygen. The cyanide method for physical and chemical examination of industrial wastes is or ctically a new one as are spectrophotometric and photometric method for color colorimetric methods for heavy metals and the amino- ntipyrine methods for phenol For bacteriologic ex minations of water the membrane filter technic has been a cluded as a tentative procedure. There also is a new sec tion on nuisance organisms and an additional MPN table. More explicit direct on are given for collecting and ex mining samples for biologic ex mi ation of water sewage and sludge 12 full piges of illustratio s of organisms are now included

This vol me is a credit to the three associations concerned in its production. It is an indispensable reference for all who are engaged in examining water sewage or wa tes.

-STANLEY | WEIDENKOPF LE Col MSC USA

PSYCHOLOGY THE NURSE AND THE PATIENT by Dorse M Odl m N A D P M 2d dt 168 pag s Pb i phic l Lubrary N w Y k N Y 1954 Pr \$4.75

The author explans in simple I aguage the development of person ality and human behavior the rel I onship of mind and body and the influence of the emotio s on behavior. Psychiatr c disorders and their treatment with emohasis on the role of the nurse is briefly discussed.

Although the book we written for the nurse in England and some terms and titles used are peculiar to the British (e.g. sister tutor) the general content would be usef to any nurse particularly to those not trained in psychology. Avoid nee of technical terms and clear explanations and format make it easy to read in duderstand

A TEXTBOOK OF NEUROLOGY by H Houston Merritt M D 746 pages 181 illustrations and 128 tables Lea & Febiger Philadelphia Pa 1955 Price \$12 50

This new text of neurology for medical students and practitioners places emphasis on diseases of the nervous system as a branch of internal medicine. Psychiatry and psychiatric syndromes are not con sidered except when mental symptoms accompany appropriate disease entities. Also omitted are the usual chapters on anatomy physiology and examination of the nervous system because the author rightly concludes that these subjects require special texts for adequate coverage. In common with other volumes on clinical neurology the various disease categories are grouped in chapters according to etiology or pathology.

Perhaps the most unique feature of this text lies in the author's effort to record factual information regarding this or that disease syn drome with little attention paid to theoretic concepts regarding etiology pathology or treatment. The author gives in concise nontechnical terminology the current knowledge in neurologic medicine and clearly distinguishes between time tested facts controversial data and unproved assumptions. Throughout the text are frank statements such as "The headaches which occur in patients with intracranial tumors cannot be differentiated either by their nature or their location from headaches due to other causes. Special attention is paid to the more common neurologic diseases such as migraine epilepsy cerebtrovascular disorders infections of the nervous system and metabolic and endocrine disturbances with relatively little space devoted to the classical neurologic syndromes which are rarely encountered by the internist or general practitioner.

A brief but adequate bibliography follows the discussion of each disease entity and there is a comprehensive index of more than 50 pages. This work admirably fulfills the goals set forth by its author namely a text of neurology for medical students and physicians. Because of its forthright style and clarity of presentation it is also recommended to internists and psychiatrists as a superior single reference volume in clinical neurology—ALBERT J GLASS Col. MC USA

PATHOLOGY by Peter A Herbut M D 1 227 pages 1 378 illustrations on 651 figures and 6 color plates Lea & F biger Philadelphia Pa 1955 Price \$16

This textbook of pathology is written primarily for the student It will be of great value to undergraduate students and yet is comprehensive enough to meet the more exacting demands of postgraduates

The book is organized along classical lines with the first seven chapters devoted to general consideration of pathologic processes. Chapter 2: unique among current textbooks of pathology in that it deals with the perfermence of an autopsy and cortains handy tables of organ weights and measurements. Remaining chapters are concerned.

w th organ

with organs orgin systems and the diseases of each. The chapter on the central nervous system is written by Bernard J. Alpers

The text is up to date and there is an excellent b blings phy at the end of each chapter. There are 1 378 black and white illustrations well selected to bring out the essential pathologic features. Six color plates which leave something to be desired as to quality nevertheless serve to illustrate the major feitures with which they are concerned. The style of the text is simple straightforward and easily understood. The type is large and easy to read in decremistive use is made of inflicts to emphasize key words. The candid and somewhat pedagogic presentation of the materi. I may not appeal to those desiring elaboration of controversial issues. With the busy student who will welcome this clear concise and comprehensive presentation of human pathology howe er it will strike a responsive chod.

-FRANK M TOWNSEND LL C L USAF (MC)

MEDICAL STUDENTS AND MEDICAL SCIENCES S m P bl m fEd ton
I B ta d tb Unit d Stat by D C S la M A M D Oxf d
M d l P bl cat 154 page G fftry Cumb tl ge Oxf d U
ty Pre N w York N Y 1935 P \$575

This well written concise monogr ph provides an interesting compartison of medical students and of the n ncl nical aspects of medical education in the U ited St tes and Great Britain While the comparison for the most part: based on subjective impressions rath t than on n objective factual study it evertheless is valuable inasmuch as relatively few people have had the opport nity to observe the operation of medical schools in both countries

Question may be rised as to thi validity of the concepts gained in the author's relatively brief contact with 12 American medical schools. His prilonged contict with medical education and medical students in the British Isles lends considerably more weight to his opinions regarding medical education and medical students in thit teal.

This book presents much of the current concepts that are prevalent in medical ed cational creles today. Some new ideas are presented and older more ccept dideas are presented in new context. The difficulties involved in evaluating the applicants to medical school in order to select tho e who will make the best physicians and the problems in evaluating a stude tspogess in medical school are well pointed out. In this connection the commend ble British plan of nv ting an examiner from outside of the medical school to assist in the examination of medical students is de crib d. O e of the subjects that is presented particularly well is the development of teacher.

This book as a whole is interesting and inform tive. It will make worth-while indicate training re ding for any medical edicator

PROTOZOOLOGY by Richard R Audo D Sc 4th edition 968 pages with 3 6 illustrations Charles C Thomas Publisher Springfield Ill 1954 Price \$10.75

This textbook was first published in 1931 under the title Handbook of Protozoology Subsequent revisions of which this is the third have incorporated a continuously expanding subject matter and have been entitled Protozoology This edition is now more than twice the size of the first There has been no change in aim the book being addressed to seniors and graduates in zoology in colleges and universities

The field of protozoology has now grown to such an extent that it is no longer possible to give full discussion of all of its phases in one volume As in the first three editions the emphasis is upon tax onomy The essentials of morphology and life history are given for practically all genera There is a listing of the better known species accompanied by excellent illustrations. The field is so extensive however that the descriptions of most species have been compressed into a form so succinct as to be of limited usefulness. In spite of this fact the taxonomic portion of the book is anything but dull and un interesting The typography organization and illustrations should make it possible for the student to determine fairly closely an unknown protozoon from any taxonomic group However since protozoa are of interest chiefly because of what they do one may wish that in a text of this nature more emphasis had been placed upon these phases of their study even at the expense of omitting taxonomic consideration of some of the groups. In its present form the book comes nearer to being a textbook of general protozoology than any previous edition

-CLAY G HUFF

POTASSIUM METABOLISM IN HEALTH AND DISEASI by Houard L. Holley
M. D. and Warne W. Carlson. Ph. D. 131 p. ges. allustrated. Grune &
Stratton. Inc. New York N. Y. 1955. Price \$4.50

This little book of 93 text pages contains a good summary of normal and abnormal potassium metabolism. As the preface states, the purpose of the monograph is to serve as a practical clinical guide to the diagnosis and treatment of alterations in the metabolism of this electrolyte. In general this purpose appears to have been achieved although at times, the brevity of some sections (particularly on therapy) is regret table.

Not everyone will agree with the recommendation that calcium glu conate administered intravenously should be listed first in the emer gency treatment of hyperporassemia Furthermore a fuller discussion of the differential diagnosis of the clinical states associated with hypo and hyper potassemia would have been helpful. The appendix dealing with the potassium content of foods and municipal water supplies is valuable. Much of the material of course appears in larger texts on metabolism. Nevertheless as a brief review of the essentials of an important subject this book will prove useful.

NEMATOLOGY by Cyrus C St g M D 2d du 1 222 pag 77 fgur 42 tabl s d 9 plat in ol Ch l C Th m P bl h Spr gf ld III 1955 Pc 519 50

The objective of the author in this general reference type of text book is to correlate laboratory data in the field of hematology with information derived from clinic lex ministion of the patient Emphasis is given properly to the hist rical spects of hematology to enable the reader to understand the development of ad ances furthermore this approach is found to be innately interesting. This fact in itself makes the text well worth read ne

In this second edition published five years after the first material his been added on vitamin B the folic acid antagonists. TEM and nitogen must rd this steroids splenectomy and the significance of drugs in the etiology of hem tologic disorders. An excellent bibling apply is presented at the end of each chipter. The author's comments based on a tensive exprience add spice to the reading. The book is quite comprehen ive and shows a fluidity of intigrated thought that is ple sing to the reader. The author points out that to keep up to date the text would hive to be revised every few months however the estiblished ficts are presented. Ech given subject succeeds the other in Imost encycloped a informative enpoyable form.

Thus the book m ke an excellent reference for the medic 1 student and general practitioner and should be made a standby by the internist ——ARCHE A INSPEAD C L. HAST (MC)

This book is directed to educators physicians clinical psychol ogit of laymen who is concerned with the psychol gc problems of subnorm I school ch liden.

The a thor's lucid style of writing lend itself well to the simple org ni at on of the book. The first chapter present his theory of per somility. Sub equent chapters pply this theoretic system to the etiology diagnosis in directment of ment lidef ciency del nquency intellectual dulliness a dineurosis. A closing chapter i devoted to a discussion of the incidence of these problems in England is well as a discui on of it retrieve methods and psychologic tests.

The theory of personality is essentially a bologic theory resting on proposed inherited set of instancts and reflecting the English faculty psychology of the 1920 s. Although the numerous cas studies rake use of the author's ensitive clinical innuition and perceptive on the sections on treatment are restricted by the theoretic emphasis on inheritance of instancts If for example much jue nile delinquency is simply an interaction to thurst of soon inherited mode of response then treatment of delinquency precess rily! I limited

Although the 1935 edition of Tb Subnorral Mind was an important contribution the present edition fails to integrate subsequent ad vances in research methodology projective testing personality theory and abnormal and child psychology. The Rorschach for example is described as "but little known" in England and no mention is made of the Thematic Apperception Test. The research studies could profit from modern advances in sampling technics and recent statistical tools. Finally, there is a conspicuous absence of contemporary approaches to personality, theory and psychotherapy as well as an absence of vast bodies of experimental data and discussions of mental deficiency delinquency and neurosis.

It is the reviewer's opinion that the present contribution of this book is limited. As a guide to the treatment of subnormal school children it is overshadowed by more modern texts.

-ALVIN R MAHRER 2d L1 MSC USA

THE YEAR BOOK OF NEUROLOGY PSYCHIATRY AND NEUROSURGERY (1954 1955 Year Book Series) Neurology edited by Roland P Mackay M D Psychiatry edited by 8 Bernard Worts M D Neurosurgey edited by Percival Balley M D and Osca Sugar M D 619 pages 97 figures The Year Book Publishers Inc Chicago III 1955 Price 17

This Year Book as in the past is an important contribution in presenting various methods of treatment research and general trends in an objective manner Particularly in psychiatry which comprises a discipline that is extremely unruniform it is imperative that comparisons be made of the multiplicity of therapeutic methods so that an exclusive philosophy of treatment or rigid creed of psychodynamics will not dominate the field to the exclusion of other methods which may very well be just as effective

In the section on neurology advances in infectious diseases are stressed in terms of the new antibiotics and the more frequent late complications of such diseases Basic work in terms of anatomy and physiology focuses on the universal use and results of localization and physiologic neuronography studies. There is an excellent review of the neurologic aspects of basic metabolic dysfunction as well as the relationship of such factors to the problems of myasthenia and myopathy

The neurosurgical section stresses some of the results and moral aspects of psychosurgical problems as well as emphasizes the diag mostic and newer ancillary anesthetic hypotensive and hybernation technics. The collective material encompasses all therapeutic aspects in the major fields of operative neurosurgery.

The section on psychiatry indicates that the literature in psychiatry shows five positive trends (1) A greater interest in the sociologic and environmental factors related to mental health and illness (2) a resurgence of interest in physiologic research (3) an increase in psy

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chosomatic studies (4) increasing interest in tre tment procedures and efforts to evaluate their rel tive therapeutic effect veness and (5) grow ing interest in child psychiatry especially of childhood schizophren a There is a negative trend because of the dearth of publications innewer basic dynamic conceptual mater al clinical psychiatry industrial psychiatry and preventive psychiatry.

The subsection on therapy includes a considerable number of articles which report the original results obtained in the use of the new drugs in the treatment of psychiatr c illnesses. The editor conclides that the lit rature points up n use t need from intend ciplinary correlation of data a better understanding of biostatistical methods—sober v lution of the effectiveness of different treatment procedures more specific etiologic data and dynamic quantitative measurem in methods—SOMETT BUILTRAL C. L. NO. UNA

THE CIBA COLLECTION OF MEDICAL ILLUSTRATIONS V lum 2 R pod t Sy ton p p d by F nk H N tt M D d t d by En t Opp h m M D wth f ewod by J h R k, M D 286 p g II na d Publish d by C b Ph tm eutcl Prod t I Summ t, N I 1954 P 213.

This volume is the second in a series which will p rtray ch of the major anatomic and physiol gic systems of the human body

Doctor Netter who e outstanding work as a medical illustrator is known to all physicians has succeeded in compling a distinctly valuable to k on the male and female reproductive systems. Under the editorsh p of Doctor Ernst Oppenhe mer and with texts contributed by 11 of the le ders an the field of urology obstart os and gynecology this book fills a ned in the teaching of many of the involved processes of reproduction.

Beginning with the first section which illustrate and describes the development of the gintal tracts the book contains four sections on the mail tract and six on the female. One section each is devoted to preparate the manary gland, and the intersexes. These 14 sections completely core the file.

The ren we was impre s d by the case w th which the excellent color d llu train is could be studied while the te t w s being read both illust to ins and text being presented on the same page. This effective meth direcult in the reader s i tention of the picture together with the ficts. The index i well arranged ind subject matter is easily located. The 104 full color carefully labeled illustrations are not themselves indexed but can be located readily by subject.

Although each of the sections 1 s gn f candy valuable the section beginner w s read by the r viewer with the gr test interest Judging by the high st ndard reached by this volume the medical profession can expect th succeeding volumes to cot to bute materially to the field of med call teaching—MORRIS M. FURIN Capt. (AC) USV

THE COLON ITS NORMAL AND ABNORMAL PHYSIOLOGY AND THERA PEUTICS edited by Roy Waldo Miner 248 pages illustrated The New York N Y 1954 Price \$4 50

This monograph assembles under one cover the present opinions of various experts on the colon as reported at a conference held by the Section of Biology of the New York Academy of Sciences on 8 and 9 May 1953. The main theme of the volume is the intercommunication among investigators in many different fields and in this light it is highly successful

Part 1 is confined to the physiology and pharmacology of the colon in its more basic aspects. One of the most interesting reports was that by Dr. H. A. Gordon of the Notre Dame group experimenting in germ free animals. They found that in these animals born and raised with out bacteria the cecum is 10 to 20 times as large as in normal animals. Part 2 covers the causes of colonic disorders and is primarily concerned with the psychogenic background from childhood experiences to life attess situations. The differentiation in end result between the intitiable bowel syndrome and true ulcerative colitis is well made in the panel discussion. In part 3 abnormal colonic pharmacology is very well discussed and covers laxatives antispasmodics and steroids. Part 4 is concerned with the therapeutic management of colonic discorders. It points up the practical clinical use of the preceding knowledge.

This is a well-organized and illustrated book and presents an exceptional bibliography at the end of each report. It is a must for any doctor who attempts to treat colonic diseases

-LFSTER J POPF Comdr (MC) USN

THE YEAR BOOK OF ORTHOPEDICS AND TRAUMATIC SURGERY (1954
1955 Year Book Sere) edited by Edwa d L. Compere M D F A
C, S F I C S 384 page 193 illustration The Year Book Publi her Inc Chicago III 1955 Price \$6

This book brings the review of orthopedic and traumatic surgery up to May 1955. As usual the text reports American and foreign literature on the subject in a concise and adequate manner. The short abstracts include the basic reference at the bottom of each page so that bibli ogtaphy searching is not necessary. The abstracts obviously are made by a varied group of assistants and the author adds editorial notes in many instance. These although not adding information express his opinion about the subject reviewed. Illustrations provided when necessary to augment the text are well reproduced.

This series continues to serve a useful purpose in abstract literature and saves considerable reading time for interested physicians. Those who have made use of previous issues as well as those newly interested in the subject will benefit by reviewing this text.

-STERLING | RITCHEY COL MC USA

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STUDIES ON FERTILITY I idg pape d t th C f th S ty f th Soudy if Fr liy L d 1954 B g Vol m VI of th P d g f th S c ty Ed ted by R G H m M A D M 151 page II trat d Ch I C Th ma P bl h Sp gf ld Ill 1954 P 34 25

This little book cont ins 16 articles (ch pters) of which only two are of a y real value to the clin cian One is The Management of Pregn ncy in the Previously Infertile Wom n and the other is The Value of Timing of Ovulation in the Treatment of Steril ty The latter p per is available from other sources

Nuch of the sp c in the b ok which really should be a journal is devoted to fundament I research a d : at the moment of no intere ; to the clinician The book is well bound clearly pri t d on good p per nd should be in reference libraries - IOHY W SIMPSON C I MC USA

THE CHEMISTRY OF MICRO-ORGANISMS by Ath B k Ph D F R I C
343 Pg ll ttd Ptm Pblihg C p N w Y k N Y

This is an e-ceptio - lly good book in a specialized field. Designed as a series of lecture for a polytechnic school in Lo don it is highly technical and will be little app c ated by nyone not thoro ghly train d 1 organic chemi t v

The author tre ts the subject of the o ganisms themselves in a non technic I fashion that is somewhat misleadi g for example rickettsiae are r ferred to a sm ll para it c b cteria. This appro ch stems from the fart h t these I ctures are directed at an audience with highly di r if ed tr ining On the other h nd the a th r is careful to po nt out that certa opinio s th t he xpresses a e at best on shaky ground ew of current inve tigat on which will perhaps ecess t te a

v on nour way of thinking o such subject. A typ cal example of b cteria le d completely ex free th s th statement that life

The sect on on antibiot c 1 well written ind the clinical limitations of certain f the a tib otic well cov red how ver co sider ble pace s given over to descript ons of the junthesi and phy ical properties of c rta a tibiotics which are no l nger i pr ctical use

The style and format are good the text is re dable (pro ided one ha a working k owledge of structural org nic chemi try) and the book is well doe me ted with p to-d e r ferenc s from both American and foreign pe iod cals. The index provid a a ready reference to my pecific compound or topic

This book shild prie of vile to thoe interested i the fild of microb 1 phy 10logy o antibotic dev lopment b t 1s not recom mended fo th se who desire a more fu d mental approach to the bio chem stry of mic o-o gan sms .- DAVID F HERSEY C pt USAF (NSC)

CONNECTIONS OF THE FRONTAL CORTEX OF THE MONKEY by Wendell J S Kneg 299 pages Charles C Thomas Publisher Springfield Ill 1954 Pice \$10 50

This book presents a detailed analysis of data relative to studies on the connections of the frontal cortex of the monkey. The author has made and recorded the observations on 70 spaced cortical lesions and by the Marchi impregnation method has traced the myelinated corticifugal fibers to their termination and position within the white matter.

The book is not a text but provides an integrated account of the frontal cortex as a further aid to a better understanding of the function all role of this part of the brain Certainly the best use of this book will be made by students of cyto-architectonics and physiologic neuronography. In its current form it will have little appeal to the average clinician and is primarily intended for those specialists engaged in investigations of cortical neuroanatomy and neurophysiology.

-CHARLES N LUTTRFLL 1 Lt (MC) USNR

REACTIONS WITH DRUG THERAPY by Harry L. Alexander M. D. 301 pages illustrated W. B. S. unders Co. Philadelphia Pa. 1955

This book meets the requirements for a comprehensive reference book for the internist and allergist and also for any physician or sur geon who uses many antibiotics and other medicines in his professional practice. As the author states hundreds of thousands of substances have been employed as drugs yet only a thousand or less are in common use. Probably every practicing physician and surgeon has some time or other seen a "reaction to some drug they have prescribed for their patients. The discussion of reactions to drugs is limited to those of hypersensitivity" and does not include those due to poisoning from over dosage or to expected pharmacologic reactions.

The format of this book is excellent in that the author presents the mechanisms of drug reactions generally then the various forms of dermatologic manifestations followed by the more serious systemic patterns. The drugs are classified as anti-infectious medications antiarthritic medications drugs used in cardiovascular disorders sedative drugs antithyroid drugs antihistanines organ extracts vita mins serums and vaccines plant products local anesthetics and finally a chapter on miscellaneous drugs. The author has compiled his data from hundreds of references which are listed at the end of each chapter as well as from his own man; years of experience

The book includes several tables showing drugs that induce the many forms of hypersensitivity reactions. This includes such med icines as sulfonamides which produce at least 15 out of 16 types of reactions and is closely followed by the mercurials penicillin to-dides arsenicals and gold salts. The author's description on systemic reactions is very clear and includes appropriate forms of treatment. The chapter on setums and vaccines is especially good and is im

portant for the modern day physics n to read for gener I knowledge of the teactions with drugs e en though serums and vaccines are not in use as widely as before the days of our numerous antibiotics A reviewer of this book has difficulty in finding any errors but it may be worthwhile to note that under the listing of drugs used in cardio vascular disorders no mention is made of the dermatologic hyper sensitivity ma ifestations occasionally seen with the use of dicumarol This is not too common but could be included for the sake of com plereness

I believe this is an excellent book for which there has been a great demand by gene al practitioner as well as specialists of 11 branches -- URHO R MERILANGAS C I MC USA

FREEDOM FROM FEAR by L t C l man, M D 285 pag
B ks In N w York N Y 1954 P \$3 95

Thi book was written for popular consumption by a well known otolarvneologist who has been interested for many years in the psychosomatic aspects of his practice. It is concerned with the increasingly imports t problem of the inst gation and perpetuation of emotional and physical illness by fear and anxiety Dr Colem n s vs m ny thing that should be said ofte and he s is them interestingly nd with a wealth of appropri te illustration. In handling his theme he shows more sophist cation and b lance than a e seen in many sim lar popularızat ons

All of the ch pters except one seem addressed primarily to the lay p blic (although m ny doctors could profit from a reading of the enitre volume) This one chapter which is the finest and most useful chapter in the book is concerned with the psychological preparation of the child for surgery It should be required reading for all surgeons and nurses in hosp tals. In other chapters the book does not entirely escape the pitfails of oversimplific tion scientific half truths and the over optimistic assumptions a sociated with most att mpts at populariza tions of psychological subjects. There iso are occasional lapses into facile writing nd vague phrasing Furthermore the jacket blurb is misleading in its statement that the book is a practical guide to self understanding ind the conquest of fear. This statement seems more a reflection of the publish r s ideas of what is necessary to sell a book of this kind thin of Doctor Coleman's own intent

With all to limit tions inherent and otherwise the is a good blok of is type I hope that it has a wide circul tion not because it is of any immediate practical value to the person suffering the effects of fear and naiety who happens to read it but because such books may add a tiny bit to the sum total of our culture s consciousness of the invidious influence of these affects on human efficiency and happiness -CHARLES S MULLIN Comb (MC) USN

New Books Received

Books received by the U.S. Armed Forces Medical Journal are acknowledged in this department. Those of greatest interest will be selected for review in a later issue.

- PRACTICAL ORAL SURGERY by Henry B Clark, Jr M D D D S 392
 pages 223 illustrations Lea & Febiger Philadelphia Pa 1955 Price
 \$8 50
- DIFFERENTIAL DIAGNOSIS The Interpretation of Clinical Evidence by A McGebee Harvey M D and James Bordl y III M. D 665 pages W B Saunders Co Philadelphia Pa 1955
- THE PRACTICE OF DYNAMIC PSYCHIATRY by Jules H Masserman M D 790 pages W B Saunders Co Philadelphia Pa 1955
- KNESIOLOGY by Katharin F Wells Ph D 2d edition 516 pages il lustrated W B Saunders Co Philadelphia Pa 1955
- DOCTOR AND PATIENT by Desmond O Ne II M D M R C. P (Lond)
 D P M (Eng.) 197 pages J B Lippincott Co Philadelphia Pa
 1955 Pric \$5
- CARDIOLOGY NOTEBOOK For Preliminary Instruction in Medical Curricula Columbia University College of Physicians and Surgeons 97 pages illustrated Grune & Stratton Inc. New York N Y 1955 Price \$2 50
- PROCEEDINGS OF THE THIRD MEDICAL CONFERENCE OF MUSCULAR DYSTROPHY ASSOCIATIONS OF AMERICA INC October 8 and 9 1954 in New York N Y 324 pages illustrated Muscular Dystrophy Association of America Inc New York N Y 1955
- DISEASES OF THE EAR NOSE AND THROAT by Filliam Wallace Morrison, M D 2d edution 756 pages illustrated Appleton-Century-Crofts Inc New York N Y 1955
- OF PUBLISHING SCIENTIFIC PAPERS by G orge E Buch M D F A C. P 40 pages illustrat d Grune & Stratton Inc New York N Y 1954 Price 22 75
- HEARING THERAPY FOR CHILDREN by Alce Streng M A Wa ng J Fitch
 M A L Roy D H dg cock, Ph D James W Phillips M D and
 James A. Carrell Ph D 371 page Hustrated Grune & Stratton I c
 N w York N Y 1955 Price 56 75
- BRITISH MEDICAL BULLETIN Blood Coagulation and Thrombos; Volume VI Number 1 82 pag illu trat d P bli h d by M dical Department The B ti h Co ncl Lond n Apr 1 1955 Distribut d by Oxford Univertity Pre N w York N Y Pric \$2.75
- DRITISH MEDICAL BULLETIN Hormo e n Reproduction Volume XI N m
 ber 2 170 pages illustrat d P blished by Medic 1 Department The
 B it h Counc 1 Londo May 1955 D tributed by Oxford Unit e ity
 Press N w York N Y Pree \$2.75

- PSYCHIATRY AND THE LAY The Proc ed g of th Forty Third A ual M t g f th Amr P y h path I g 1 A oc ti h lil New York Cury Jun 1953 Ed t dby P 1 H Hock, M. D d J pb Z b Pb D 232 p gc II t t d Gr & St tton In N w York N Y 1955 P 15 50
- ATLAS OF ROENTGEN ANATOMY OF THE SKULL by Lu E EH M.D F A C.R with ton the Rd griph Anat my 1th T m poral Bo by J B um F or M D F A C.S d cut on the Rd gr An tony 1th Skull th N whore Inf t by S mu I G. H dr n, M D F A C.R d L.S. Sh man, M D 216 p.g. 239 plat Charl C Th m. P bl h Sprigf id III 1955 P. \$1475
- RADIOGRAPHIC ATLAS OF SKELETAL DEVELOPMENT OF THE KNEE

 A S d rd f R f r by S. Id II Pyl Ph D d Normand L

 Horm Ph D M. D. 82 pag 29 pl t Ch le C Thom Publ h

 Spr gf ld IIL 1955. P \$4 25
- BLOOD SUPPLY AND ANATOMY OF THE UPPER ABDOMINAL ORGANS

 With D pu Atl by N bol A.M. b Is M A D Sc (L uv).

 SSI pag 172 ll rt l ding 166 for J B L pp cott C

 Phil delbb P 1955 P 224
- NEW AND NONOFFICIAL REMEDIES 1955 Cot g Decreptifth A ticls whi h d A prid by th Coci Pharm y d Chmry fth Am s M dclAs cotat Juary 1 1955 I sudder th D t d S perv f Th C un il Phrm y nd Chm ty Amer an M di Asot t 653 p g s 11 trat d J B L py cott Co Phild I ph P 1955 Pr \$3 35
- THE VISUAL FIELDS A St dy f th Appl f Quatt P m ty t th An tony d P h l gy f th V ual P thw y by B od Hugh M B B S (L od Y CH M, (Burn.) F R C S (Eng.) 174 pag. il lustred Chal C Th ma P bl h Sp gf ld III 1954 Pr 1725
- TEXTBOOK OF HEALTHFUL LIVING by H Id S. D bl M A M D S D 5 b d 1 802 p g II t t d M Gr w Hull Bo k C I N w York N Y 1955 P \$6.
- COUGH SYNCOPE by V t J Derb M D F A C P nd Andrew
 Krr J M D Am rica L ctur Se P blot t N 231 A M og ph Th Ba t D f Am L tur I m 1
 M d in Edt d by R oe L Pull n, A B M D F A C P 182
 p g ill trt d Chal C Th m P bl h Sp gf ld Ill 1955
 P 24 475
- INTESTINAL OBSTRUCTIONS Phy 1 g 1 P th 1 g 1 d Cl 1
 Co deat W h Emph a Therpy I clad g D c pt of
 Op ra P edur s by Owe H W g t n, B A M, D Ph D
 3d d t n, 838 pag ill ut d Ch 1 C Th ma P bl h Sp g
 f ld 111 1955. P 415 50
- THE DENTAL ASSISTANT dit d by Job C. B. er D. D. S. M. Sc. 398
 page llustr ted. Th. Bl k. t. D. M. Graw H. H. Book Co. 1
 N. w. Y. k. N. Y. 1955 P. \$7

- PROBLEMS OF CONSCIOUSNESS Transactions of the Fifth Conference March
 22 23 and 24 1934 Princeton N J Edited by Harold A Abramson
 M. D 180 pages illustrated. Sponsored by the Josiah Macy Jr
 Foundation New York, N Y 1935 Price \$3 50
- - A DICTIONARY OF TERMS IN PHARMACOGNOSY AND OTHER DIVISIONS
 OF ECONOMIC BOTANY by George Macdonald Hocking Ph D 284
 pages Charles C Thomas Publisher Springfield 111 1955 Price
 39 75
 - SELECTION OF ANESTHESIA The Physiological and Pharmacological Basis by Job Adra: M D 377 pages illustrated Charles C Thomas Publisher Springfield Ill 1955 Price \$650
 - SURGICAL PHYSIOLOGY OF THE ADRENAL CORTEY by James D. Hardy
 M. S. (Chem.) M. D. F. A. C. S. 191 pages illustrated. Charles C.
 Thomas Publisher Springfield till 1955 Price \$5.75
 - VIRUS AND RICLETTSIAL DISEASES by S P B dson M D D Sc F R
 C P F R S A W Downte D Sc M D F O MacCallum B Sc
 M D and C H Stuart Hartis M D F R C P 2d edition 406 pages
 the trated William as Wilkings Co Baltimore Md 1955 Price \$6.75
 - AN OUTLINE OF PRESENT DAY THORACIC SURGERY by Robert 1 Ca Ison
 M D 1358 page Educational Publishers Inc St Louis Mo 1954
 Pric \$4.75
 - THE PATHOGENESIS OF POLIOMYELITIS by Ha old K Faber M D 157
 pages illustrated Charles C Thomas Springfield Ill 1955 Price
 - CLINICAL TONICOLOGY by Clinton H. Thenes M. D. Ph. D. and Thomas J. Haley Ph. D. 3d edition. 437 pages. illustrated. Lea & Febiger Philadelphia Pa. 1955. Price \$6.50
 - ADAPTIVE HUMAN FERTILITY by Paul S Hensbaw Ph D 322 pages illustrated The Blakiston Div McGraw Hill Book Co New York N Y 1955 Pice \$5 50
 - LABORATORY IDENTIFICATION OF PATHOGENIC FUNGI SIMPLIFIED by Elizabeth L Hazen Ph D and Frank Curris Reed American Lecture Series Publication no 253 A Monograph in American Lectures in Tests and Techniques Edited by Gibert Daildorf M D 108 pages illustrated Charles C Thomas Publisher Springfield III 1955 Price 35 50
 - SURGERY OF THE SMALL AND LARGE INTESTINE A Handbook of Oper ative Surgery by Charl's W Mayo M D Section of Surgery Mayo Clinic Rochester Minn Professor of Surgery Mayo Foundation Graduate School University of Minnesoma 340 pages illustrated by Russell D ak The Year Book Publishers Inc Chicago Ill 1955 Price 19
 - THE ABNORMAL PNEUMOENCEPHALOGRAM by Leo M Davidoff M D Professor and Chauman Department of Surgery of the Albert Einstein College of Medicine and Director of Surgery Bronz Municipal Hospital Center Chief of Neurosurgery Mount Sinai Hospital New York N Y and B mard & Espit in M D Chief Department of Radiology The Long Branch Jewish Hospital New Hyde Park N Y 2d edition thoroughly revised 518 pages with 698 illustrations on 2015 figures.

- CLIMICAL DIAGNOSIS by Elme G W kef ld B S A B S M D F A
 C P D plmat f th Am Bord f Int l M di Con
 lt g Phy i in Section f M d c M yo Cl d A ociat
 Pr f f M d May F ndat for M d cal Ed cat nd
 R h Graduat School U ty of M nne ra Roch t M
 1 611 page 135 ll trat co Applt C uty-Cr ft I New York N Y 1955 Pri \$22 50
- SADDLE BLOCK ANESTHESIA by R Y T P rmley M D Amr L tur S P Bl cat on Numbe 258 A Mon graph Am tca L ctur A b 1 g d d b 1 p b Ad au M D 59 page III rat d Chal C Th mas Publ h Spr af ld Ill 1955 Pice \$2 50
- TRANSPLANTATION OF TISSUES Carr lag B n F 1 T nd d Mn i by Ly d A P M D V l m I 421 page il tr t d Th W il ma & W lk a C Faltun re Mi 1955 P \$13 50
- TALKING WITH PATIENTS by B Bd M D 154 page I B L pp ott Co Ph lad lph P 1955 P 13
- INDUSTRY AND TROPICAL HEALTH II P d g fth S o d C f I d t 1 C I f T peal H lth Sp o d by Th H was 5 hool f P bl H lth Ap 1 20-22 1954 i N w Y k od B ton 266 pag llustrat d P bl h d f Th I d t I C I f Tr p cal He ith by Th H ward S hool (P bl H ith B 1955 P e \$10 (P f 1R t \$5)
- YOUTH S OUTLOOK ON THE FUTURE A Cros N t nal St dy by 1 m

 M G Il p C lby C ll ge nd G don W Allport Ha va d Un

 ry Doubl d y Pape P y h l gy DPP 15 61 page D bl

 d y & C 1 G rd C ry N Y 1955 pr \$0 85
- FRACTURES AND JOINT INJURIES V 1 me II by S R g nald W t n-J ne F R C S F R A C S (Ho) F A C S (H) F R C S E (H) M Ch Orh B S M B Ch B M R C S L R C P 4th ed on 1073 pag llustrat d W llum & Wilk ns C Bal Md 1955 Pr \$22
- SYSTEMIC ASSOCIATIONS AND TREATMENT OF SKIN DISEASES by Aurt 14 ne M D 556 pag 90 Il tra ion C. V M by C St L M 1955 P \$17
- PELVO-SPOVDYLITIS OSSIFICANS Rh uma d or A tylos g Spondyl by R graz R matmus M D nd S Yd n, M D 161 pag llus trat d Y Book P bli h Chicag III 1955 P \$850
- KRONFELDS HISTOPATHOLOGY OF THE TEETH d Ther Ser und g
 Sectur Reisd d deed by P l E Boyl D M D 4th edet 535 pg 497 llustrt dZclorplat Le & Fbg Phidloh P 1955 Pr \$10
- THE PREVENTION OF DISEASE IN EVERYDAY PRACTICE by I ador Givne BSMDFACS dM n Bruger M. Sc MD C. M F A. C P 964 pg 11 m d The C. V M by Co S Loui M 1955 Pric \$20

INSTRUCTIONS FOR AUTHORS

The United States Armed Forces Medical Journal is devoted to the publication of original investigations ob ervations and clinical experiences of interest to personnel of the medical services of the three military departments Contributors who are affiliated with one of the military services in a commissioned enlisted or civilian capacity should forward manuscripts to the Surgeon General of the United States Army Navy or Air Force Washington 25 D C in accordance with existing regulations The cove ing letter should state that the author desires the manuscript to be given consideration for publication in this Journal Other authors should send manuscripts directly to the editor Accepted manuscripts become the property of the Armed Forces Medical Publication Agency and will not be returned

MANUSCRIPTS

An original typewritten copy of each manuscript with wide margins on unruled paper size 8 by 101/2 inches must be submitted Carbon copies are not acceptable All written matter including references must be double-spaced Articles are accepted with the understanding that they are submitted solely to this Journal and that they will not be reprinted without the permission of the editor A brief factual summary which is complete in itself should conclude each paper The editors reserve the privilege of editorial modification The senior author will be furnished with a carbon copy proof of his article prior to publication Authors alone are responsible for the accuracy of their statements

REFERENCES

References to published literature should be listed at the end of the article in the numerical order in which they are cited in the author's text. Care and accuracy in their preparation will expedite publication of the article Following are correct examples of references

Fleming A Young M Y Suchet J and Rowe A J E Penicillin

Fleming A Young M 1 Suchet J and Howe A J E. Penicillin content of blood serum after various do es of penicillin by various routes Lancet 2 671-674 No. 11 1944

Cabot R C Pernicious and secondary anemia chlorosis and leukemia In O Ier W (editor) Modern Medicine 3d edition lea & Febiger Philadelphia Fa 1977 Vol 5 pp 33-100

FIGURES AND TABLES

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In this issue ተተተተ

Respiratory Disease Research Portal Venography Cardiovascular Surgery Nerte Gas Poisoning Psychiatric Case Histories Reporting Military Medicine

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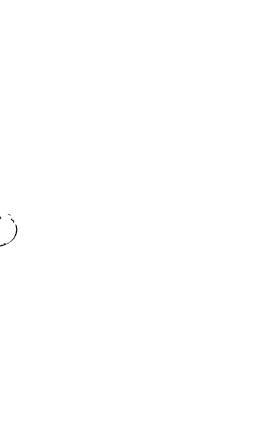
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WASHINGTON 1955



Monthly Message

Recently I accompanied the Vice President to a Chaplains-Parents meeting in Rochester, New York One of the strongest addresses was given by the Jewish chaplain who had been born and educated in Russia under the old Czarist regime under the proscriptions as applied to the Jews He told us what the United States of America meant to him

Not infrequently I also receive letters—some from men who served in foreign armies in World War II. Now settled in this country, they write to ask if there is any way in which they can serve in the medical corps of our armed services to show their appreciation of the opportunity to live in the United States I am therefore quoting to you one of the famous passages in the world s literature. It is from the Funeral Oration by Pericles over those who had died in war during the previous year. The date is 430 B. C. the end of the first year of the Peloponesian War. I suggest that you substitute the United States for Athens and meditate upon the contents of this paragraph.

So and such they were these men-worthy of their city. We who remain behind may hope to be spared their fate but must resolve to keep the same daring spirit against the foe. It is not simply a question of estimating the advantages in theory I could tell you a long story (and you know it as well as I do) about what is to be gained by beating the enemy back. What I would prefer is that you should fix your eyes every day on the greatness of Athens as she really is and should fall in love with her When you realize her greatness then reflect that what made her great was men with a spirit of adventure men who knew their duty men who were ashamed to fall below a certain standard If they ever failed in an emerprise they made up their minds that at any rate the city should not find their courage lacking to her and they gave to her the best comribution that they could They gave her their lives to her and to all of us and for their own selves they won praises that never grow old the most splendid of sepulchres-not the sepulchre in which their bodies are laid but where their glory remains eternal in men's minds always there on the right occasion to stir others to speech or to action. For famous men have the whole earth as their memorial it is not only the inscriptions on their graves in their own country that mark them out no in foreign lands also

not in any visible form b t in people s hearts their memory abides and grows. It is for you to try to be like them. Make up your minds that happiness depends on being free and freedom depends on being courageous. Let there be no relaxation in f ce of the perils of the war. The people who have most excuse for despising death are not the wretched and unfortunite who have not open of doing well for themselves but those who run the risk of a complete reversal in their I les and who wild feel the difference most intensely if things went wrong for them. Any intelligent man would find a himilatio caused by his own slackness more painful to bear than death when death comes to him unperce ed in battle and in the confidence f his patriousm

FRANK BERRY M D

A Istant Secretary of Defe se
(Health and Medical)

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Foreword

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FRANK B BERRY M D
A t 15 tary /D f (II lib d M d l),
MAJOR GFRERAL SILAS B IIAYS
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REAR ADMIRAL BARTHOLONEN W HOGAN
S R G I U t d St t A y
MAJOR GENERAL DANC OGLE
S R G I U t d St t A F

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Number 10

PLASTIC SURGERY AT BROOKE ARMY HOSPITAL

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PLASTIC surgery at this center is general in character. It has been used to repair congenital and acquired defects of all body areas. Emphasis is directed, however, especially to the management of regional traumatic defects. Patients transferred to this hospital from almost all zones show excellent early wound care. Primary healing has resulted from the judicious use of the free skin graft. Much extremity, tissue has been saved by this procedure. In the head and neck region preservation of soft tissue prits, coupled with early architectural fixation, has all lowed the salvaging of many features. Rapid wound healing has permitted these patients to begin a program of reconstruction at an early date and has reduced the number of definitive plastic operations.

In general, reconstructive operations have not been begun until scar tissue has become soft and mobile and all peripheral tissues have returned to normal Each surgical step has been devised to improve the results obtained by the previous operation Areas of motion have been treated first Operations on the nose, eye lids oral orifice, and nock have been necessary to improve the airway, protect the eveglobe from exposure and trauma, remove interference with feeding, prevent nock contractures that fix jaw positions and expose the oral area in the repair of extremities, the flexor and circumferential lesions have received first attention

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THE FREE SKIN GRAFT

The free skin graft has been frequently used for definitive As a type of transplant it can be obtained in variable thicknesses up to and including all the corium The requirements of the recipient site determine the degree of thickness of the skin graft Thin grafts are indicated when early wound healing is desired The thicker graft is more valuable for definitive repairs Each thicknes of graft has individual characteristics. The thin ner the graft is cut the more apt it is to take Thin grafts con tract to a greater degree with healing than do thick grafts Protective coverage of the part is proportionately decreased with the thinness of the graft. For definitive procedures, the choice free graft is one that is cut about three fourths of the skin thick ness At this cutting level sufficient skin elements are left in the donor area to permit spontaneous healing. The three-quarter thickness skin graft ordinarily can be made to take perfectly only on surgically clean recipient sites In the past plastic surgoons have chosen the full thickness graft for definitive plas tic treatment because it offered the maximum coverage to the recipient site contracted the least during the postoperative course and usually offered a better color match than the thinner graft. I drawback however was the fact that if the graft was large the donor site had to have a split skin graft from another site to obtain closure The three quarter thickness skin graft has now proved definitely equal to the full thickness cut in regard to fundamental characteristics. It offers an auditional advantage that if cut by machine and properly applied it will provide a 100-percent take A full thickness graft cut by scalnel carries up to a 00 percent loss in take

Recipient sites for free skin grafts in addition to blood supply also have individual characteristics which influence service ability of transplant. The stability of architecture influences graft contracture Thin grafts on nonresilient backgrounds con tract little while those on soft mobile structures contract the most An example of the former would be the forehead of the latter the neck If a graft contracts further grafting has to be done to relea e the contracture. This process continues until surface replacement equals surface loss in volume area and quality. This is a practical point to be noted in any attempt to overcorrect a region in anticipation of subsequent contraction Skin grafts will take if fundamental surgical principles are not violated In definitive repair all fibrosis must be removed herostasis must be complete and the graft immobilized in place for 14 days Clean wounds when grafted do not usually require a change of dressing before the eighth postoperative day

To be grafted a granulating region must be relatively free of bacteria. Continuous wet dressings and specific antibiotics

prepare the area Clinically, when ready for grafting, it will appear bright red in color It will be nonedematous. There will be no peripheral cellulitis. On such a site a thin skin graft is more apt to take than a thicker one. The first dressing is done on the fourth postoperative day. The process of drainage by continuous wet dressing technic is then continued until healing is adequate.

The homografting procedure combined with the autograft (figs 1 and 2) is another method. In the patient shown, seven donors supplied 14 segments of skin, each measuring about 4 by 8



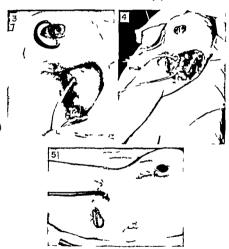
F g re 1 The area to be skin grafted is shoun.



Figure 2 A tografts cover buttocks and thighs.

inches These pieces were united to form a large blanket. Segronts of the patient sown skin wore applied to the buttocks and the homograft blanket added to cover the remaining granulating area. The whole procedure of application required less than an hour

Unusual accidental traumas occur now and then These may present problems in surface coverage Figures 3 4 and 5 illustrate such a situation The patient a motorcycle casualty sustained the avulsion of the entire leg the genital organs and one half of the bony polyus As an emergency procedure the full



gue 3 The a 1 d ocerodism dust by a th h ad t adhere t be tame ti Th traplest a 1 f m the a 1 d t muy 1 it condito the pt 1 f m d t Dook Army II pull Figure 4 Development a complibed tage 8 gr slat g re ad quate for grill g de el ped F gue 7 Appe nee filer h g f li

thickness skin and subcutaneous tissue was removed from the avulsed extremity and used as an immediate coverage. It is obvious that, without a tube to supply blood, such a graft would die, however, it served as a lifesaving procedure and remained in place until sufficient granulations formed beneath the trans plant Debridement was accomplished in stages The granulating area with preoperative cleansing then presented a recipient site adequate to receive i free skin graft. The closure resulted in a relatively firm diaphragm This is in contrast to a recent in stance in which a patient with a similar condition was treated at the first stage by a free skin graft The graft take was suc cessful, but the diaphra, m so formed was thin and fluctuant It is possible that a pedicle flap will have to be substituted to complete the repair

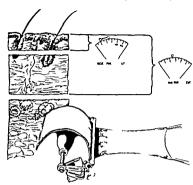
Figures 6 and 7 show a large open wound with granulating surfaces and the result obtained The avulsion wound of the

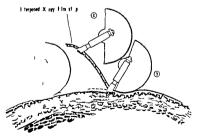


Figure 6. Peoperat e taumatic shouldet uo nd Figure 7 Final appearance after an intermediate sta e of skin grafting

shoulder was healed by coverage with the free skin graft Subsequently this entire segment was excised and the adjacent skin undermined and advanced to produce a single line closure This early and late treatment is illustrated in figure 8

In alternative method of coverage is accomplished by excision of all granulations and application of a skin graft to the new bed The method is applicable for a burn of an extremity A tourniquet applied above the lesion can make the field almost bloodless With the use of antibiotics, a three quarter thickness type of graft will take Results may then be such that no subsequent definitive skin graft will be necessary. This eliminates much





The method f drum poston g t make the c t n-Th u / l a u ll for the thicke c t g aft d



F g re 13 A double-d um length of skin oblitined by repos tioning the d um of the dermatome



Fig. e 14 P eoperative appearance of old healed burn sca. contracture of neck.

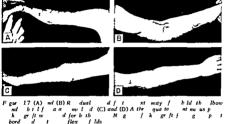
Fig. re 15 Repair by excision of l m tino c cat ix and substitut on skin graft.



Figure 16. Method of stent application for graft fixation: (1) vaseline gauze placed drecily over attached graft, (2) moistened cotton layer cut to shape (3) gauze fluffs femily approx rated to recipient is a stent fashion.

In children the institution of free grafts for repairs follows growth curves Ordinarily it is best to vait as long as possible for complete scar softening before definitive repairs but the surgeon must always act before serious contractures occur

Figure 17 shows a scar defect involving the elbow and cubital fossa region. The anterior contracture was removed by excising the limiting contracted scar and supplying normal coverage. The free graft was obtained from the abdomen and was fixed on the arm stent fashion. This eliminated the circular bandage pressure method and its concomitant circulatory hazards



In hands free graft coverage is always best. This type of skin graft would not be indicated however when intrinsic repairs are necessary. In this situation, a pedicle flap would be required Figure 18 shows skin graft substitutes for palm losses

THE TUBE PEDICLE

Skin tube pedicles as separate units have been frequently em ployed when coverage by open flap could not be conveniently designed. The skin tube offers a clean, healed soft tissue trans plant having migratory features not otherwise attainable construction of an abdominal skin tube and migr tion by inter mediate carrier is shown in figures 19 and 20

Figure 21 shows the result of this procedure in a patient who had sustained a high voltage current trauma. In 21A there is a loss of skull in the occipital area. The central dural protrusion has been free skin grafted In 21B a layer of abdominal skin with its subcutaneous tissue has grown into place as coverage. The soft tissue coverage reconstruction is complete. The final stage will Octob 1955) PLASTIC SURGERY AT BROOKE ARMY HOSPITAL 1415

be a bone graft transplant from the ilium to the skull The flap coverage forms an adequate soft tissue bed for this construction. The flap of tissue prepared initially before transfer, as shown in the diagrams, must be undermined completely, care being taken not to buttonhole the fascia. Complete hemostasis not only in the fascia area but also in the base of the flap, is imperative If hemostasis is neglected or if its absence is masked by procaine hydrochloride and epinephrine anesthesia, the results will be disastrous. The tissue flap properly prepared has its cut edges united, forming the skin tube. Closure of the subjacent denuded

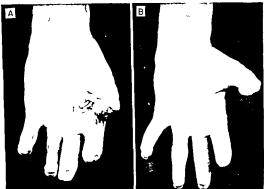
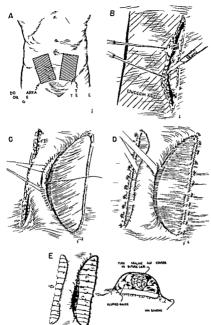
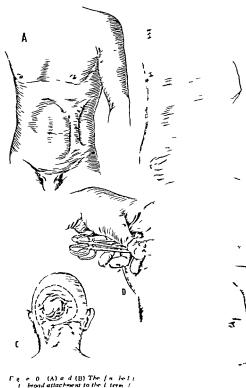


Figure 18 (A) and (B) Almost the entire pairs of an adult has been resurfaced

area can be brought about by a variety of methods depending on the location the size of the tube formed and the personal experience and training of the surgeon When tubes are small, adjacent undermining of soft tissue mobilizes it for closure. This if done, should always be accomplished without tension. If tension is present healing will usually occur with sear formation. If the tube is to be as large as that shown here, closure is best by free graft. The periphery of the graft is mattress sutured to the skin and subcutaneous tissue of the recipient border. The free graft is approximated and fixed by a form fitting stent-type dressing. Prior to transfer to the recipient site, large tubes must be tested for adequacy of circulation at the end to be moved by means of rubber hand constriction or by delay transfer procedure. After a new blood supply to the tube is established from the wrist, the effective can be transported.



tur 19 (A) (B) (C) (D) and (E) Abd m nallocton 1 tb p di-l nd m thod 1 on tuct A k gr ft from the ppost id of the bd me wa pplied t th owd nora (C) held place mattre tur (D) and fix du tb t t dre



g e 0 (A) a d (B) The f n hel: t broad attachment to the i term (for the flap Sk graft d cted --to the rec p nt t

An arm tube flap is applied as a forehead soft tissue reconstruction (fig 22) In the patient shown in figure 23 a bone graft to complete skull continuity was also needed A prosthetic eye is in place. In some situations residual soft tissue is adequate so that only hope is necessary to complete the reconstruction (fig. 24) Bone grafts are usually taken from the ilium



of beal dw ndf m le trical tr uma The kill bone wal t. The dur was ov red p vi usly by k graft erg with k nd ub utan us abdom nal tis ue

Intermediate carrier such as the forearm for transfer of skin tube or flap _rafts occasionally may be needed in jaw reconstruc tion where massive bone grafts are necessary to rebuild the man dible (fig 25) The abdomen may be the preferable site for ob taining soft tissue substitute because it is the thickest material at hand. The soft tissue skin surface of the transplant rarely matches the adjacent facial skin. To improve the facial appearance after architectural repair is complete the surface pedicle skin can be excised and the adjacent facial skin mobilized over the summit of the added subcutaneous tissue (figs. 26 and 27) This cosmetic procedure is performed after the bone graft take is complete

THE OPEN FLAP Skin GRAFT

The open flap skin graft differs from the tube in that it remains open in continuity. The raw areas both donor and free flap base are free grafted in order to obtain a completely healed lesion postoperatively in cases where all denuded areas are skin



Fig e 22. Tube formed on arm freed at proximal end afte delay procedures is attached as coverage replacement for fo ebead defect



Figure 3 (A) Preoperative appearance of forehead. There is frontal bone loss chlaced by cicatrix and emphthalmos is present. (B) Appearance of a tube flap after bone gaft econst uction and placement of a prosibitive eye.



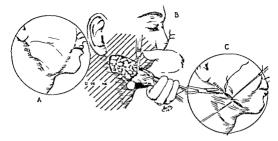
Fg 24. (A) Pp i ppe ff hd d quat ft iss bed pnt (B) Piperi ppe a ff or bed bne gr ft for kli def tik fnith lm

dressed " the pedicle on section can be immediately embedded. The second operation thus completes the procedure

The abdomen is the common site for open flaps In the wrist defect shown in figure 28 a free skin graft produced early healing eliminating the fibrotic phase It was necessary to substitute a flap in order to have soft tissue coverage that would ensure an adequate soft tissue bed for intrinsic repair Figure 29 shows an arm defect requiring bone grift The soft tissue was



Fgre 25 (A) P per t app ce The I f b k t and b I body f mand ble (B) A t b p d I ta plat formed the higher smort dus a for m at mediat rise



F gure 26 (A) Flap replacement for cheek tissue a poor color match (B) Surface of pedicle skin may be excised leaving transplant subcutaneous tissue in place (C) Adjacent cheek undermined and loosely united over 5 minut



F gure _ (A) Appea a ce of pat nt before procedure shown in figure 26. (B)

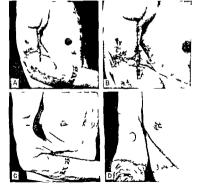
F nal app a ance

nadequate A bone graft in this material would likely fail A wrap around open skin flap was substituted to provide an ade quate bone graft bed

In general skin flaps are constructed so that they completely cover the defect. They are attached without tension, and in a manner so that the free area of the flap joining the body and completing the vascular continuity does not bend or kink If this allowance is not observed nutritional supply is jeopardized Small sharp bends may if subjected to subsequent edema be



Fg 28 (A) P p t pp nc gr ft (B) Abd m nal flap place ly be l g by k



F gur 29 (A) nd (B) Pre per t pp ar S ft 1 adequate for the pr d farm Bon g ft (C) R ve u p-a und pr dur (D) T pl tion for pur ba

converted into pressure kinks which will destroy the vascular supply to the transplant. The periphery of the flap should be carefully approximated to the wound circumference

The anterior surface of the chest offers a flap of thinner character than the abdomen and may be the choice for certain defects of the hand Complete avulsion of the integument and tendon fascia in many places, involving the index and long fingers of the hand, was treated by immediate insertion of the digits into a skin pocket (fig 30) The definitive procedure consisted of removing enough attached thoracic skin and subcutaneous tissue to completely wrap around the fingers In this case, three delay procedures were believed necessary before complete detachment This procedure today is an uncommon one If skin and subcu taneous tissue is needed, a tube in one as a transplant method would be preferable Petention of this digit without sensory feel ing is debatable



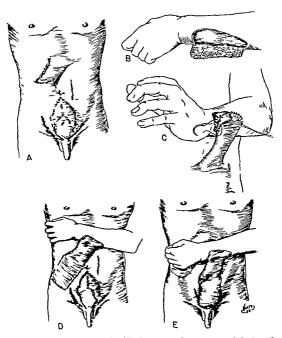


Figue 30 (A) Deep face avul on nece situted flap cove age With the poch t method t is mo e d ficult to preserve cleanliness. The tube in one method is pr f able (B) Final appeara c

The open nump flap popularized in World War II has been used frequently and seems to be a somewhat faster procedure for the transportation of large tissue masses than in certain combined flap types This however, is variable because much depends on the individual operator

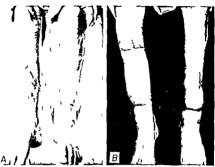
Figure 31 shows the result of a jump flap transfer in repair of a lower abdominal defect The technic of flap attachment to the intermediate carner is illustrated in figure 32 The raw surfaces of the flap had been skin dressed. Three delay procedures were used before the transfer to the recipient site. This latter was prepared by removing the cicatrix and skin graft covering the peri toneum This long open flap is a modification of the broader type transfer



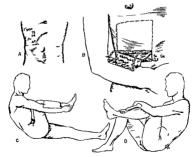


f gure 32 (A) (B) and (C) The f st stage of construct on of the long flap a d is attachm in to an interm d are carr er (B) and (E) Method of transfer The doit d l es (F) are the s mination of delay procedure incisions

Figure 33 shows the results of resurfacing both legs in preparation for bilateral bone grafts to the tibia. One extremit, having a rather large defect, required a transference of soft tissues that would cover about two thirds of the lower leg. The method is shown in figure 34. The left leg, having a smaller defect but requiring good coverage, was repaired by tube pedicle transplant from the abdomen.



g 33 (A) Pep tapp Bible dhaw b the diprodecy heig (B) Fl liL file fac d bdm malib pd lightle by fa p 1 mpflp



34 (A) (B) a d (C) P ght leg (D) L ft l g , f 33 Sam

In resurfacing a lower extremity with deep surface defects, several methods have been found satisfactory The immediately rotated flap has been useful with a skin graft covering the de nuded site This type of tissue transfer properly done carries added circulation to the recipient area Parallel double pedicle shifts can sometimes be used where lesions are susceptible to these reparative procedures Rapid repair, shortened con valescence, and facilitated postoperative care are the benefits of both these methods

The cross leg open skin flap has been used and can be a one stage procedure depending upon its location In general, for lesions on the lateral leg or foot, cross leg skin pedicles will have to be located in situations where, because of blood supply. a delay procedure is necessary to augment vascularity Meticu lous surgical care is paramount. An improperly or inadequately delayed flap will subsequently show marginal or continuity losses Flap destructions due to improper design or surgical technics are dreadful things and greatly lengthen hospitalization time

By and large, lower leg skin flaps are easier and more certain to be successful than thigh transplants. Thigh skin flaps are indicated, however, when a larger amount of subcutaneous tissue is required They may also be indicated where a cross leg flap has been previously lost, or there are amputation prohibitions Inner thigh slin tubes and reverse suprapatellar flaps in general are successful

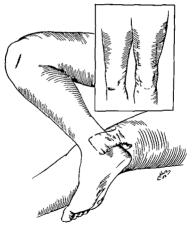
An ankle defect was repaired by a thigh skin flap (fig 35) The position of flap attachment is shown in figure 36 A plaster splint immobilized the legs. An avulsion wound of the foot requiring not only intrinsic repair but also adequate surface protection against subsequent trauma is shown in figure 37 The cross leg flap tech nic is shown in figure 38

An infrequent use of the open calf flap is shown in figures 29 and 40 The split distal end allows the transplant to cover a bi lateral defect of the ankle Figures 41 through 43 show a thigh tube pedicle used in the repair of a defect of the heel surface Figure 44 shows the position of attachment

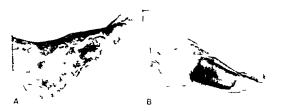
Skin tube pedicles used to repair defects of the colo of the foot are infrequent. They are more time consuming in comparison to the open flap cross leg technic For example, a multiple mi gration procedure was used to surface the sole of a foot injured by radiation The procedure was so planned that the thicker ekin of the back ultimately came to resurface the only of the first The technic of migration is shown in figure 4" if ill is the it: unique possibilities Figure 46 show the result (' 111 A 1 / 11) method



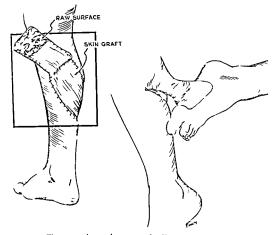
Fgur 35 (A) P perat l on qua g fl p ver g (B) F l ult.



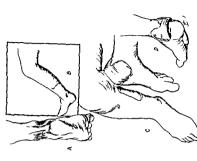
F gure 36. A spap i llar flap ed t ep nkl d f

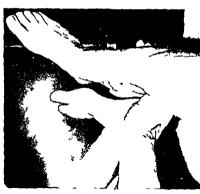


F gure 37 (A) P coperative appearance (B) Final result.



F g re 38. The rau surface of const cted call flap were skin graft d e sed to prod ce a heal d nit The position of crossl g attachm nits also shown





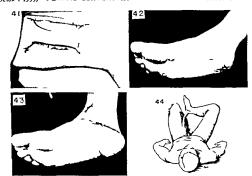
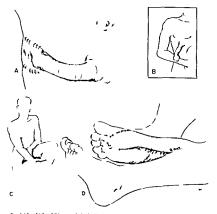
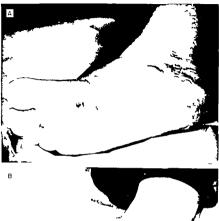


Figure 41 A constructed thigh skin i be u th distal delay i cis on A skin graft s faces the donor site Fg e 42 Preoperative appea ance of beef defect Figure 43 Final appea ance of beef Figure 44 A sketch illust ating the method of fixing a tube t ansplant to a beef



igur 45 (A) (B) (C) and (D) T be constict on a diringration to sole of foot This unu all poeed re-how tan fer post bites.





46. (A) Rad ton cr (B) Cog ppld fom pdlk f

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THE MODERN SURGEON

The self sufficient surgeon is no more The modern surgeon remains the head of the operating team but his personality and characteristics are quite different from those of his predecessor. He has learned from experience what can be accomplished by concerted effort in the operating theatre by the help of a highly skilled staff of workers and in the world at large by organization. He need not abandon his authority but he must exercise it with wisdom. He must be able at one and the same time to assume full responsibility for the operations he performs and to share the honors of success with his colleagues. He must combine the encyclopedic knowledge required of the modern surgeon with the objectivity of a research scientist his sense of justice must be unimpeachable and at the same time his attitude must be friendly outgoing and genial to all with whom he comes into contact. Patience as always is of the essence. He cannot always find the helpers he needs he must work then generously and graciously with those who are available.

-CARLOS GAMA M D

P 602 May 1955

in Journal of Inte nat onal College of Surgeons

ACTH AND NITROGEN MUSTARD IN THE TREATMENT OF NEOPLASTIC DISEASE

EMANUEL ROLLINS C pta (MC) USN CHRISTOPHER C SHAW C pt (MC) USN

R OR the past several years the role of nitrogen mustard in the therapy of neoplastic disease has undergone extensive investigation Reports from many sources have established fairly well the status of this chemotherapeutic agent. The adreno corticotropic hormone of the pituitary gland (ACTH) has been similarly studied. The present report reviews the results obtained from the combined use of nitrogen mustard and ACTH therapy in a wide range of neoplastic diseases.

The use of nitrogen mustard in the treatment of neoplastic disease came as a sequel to investigations of the biologic actions of mustard gas after World War I and again during World War II It was observed that mustard has slowed the rate of cell division impaired the formation of blood cells in man and inhibited the formation of tar induced tumors in mice Experiments with closely related chemical compounds the nitrogen mustards exhibited similar biologic action with less toxicity. The most effective of the nitrogen mustards proved to be the preparation used in clinical medicine today namely methyl bis beta chloroethylamine hydroclloride (HA) This compound is a stable highly soluble white powder which in aqueous solution rapidly undergoes a chemical reaction known as intramolecular cyclication with the formation of a highly reactive cyclic onium cation ethylenimonium. It is the latter cation which reacts with the body cells and produces both toxic and therapeutic effects which have been so extensively investigated in the nast decade. The reaction of nitrogen mustard with water to produce the reactive ethylenimonium ring is completed in 2 or 3 minutes

methyl bis beta chloroethylamine quaternary ethylenimonium

Fmth Md 1S USN val H ptal Oaki d, Calaf Cap R ll gnd to USN val H ptal Bm Th.

With the completion of the second stage, which is slower, the cytotoxic effect is lost, a mono- and finally a di hydroxy compound then is formed

An appreciation of the above reaction explains the need for the immediate administration of the nitrogen mustard solution.

It is known that the ethylenimonium compound reacts with and alters many functional groups of compounds of biologic importance such as camino sulfhydryl, hexose phosphates and many others The outstanding reaction is that which causes the death of cells When therapeutic doses of nitrogen mustard are administered cellular susceptibility is related to proliferative activity Mitotic activity of many types of cells from several species of experi mental animals is inhibited by minimally effective doses of nitrogen mustard. Vitotic inhibition is confined to the resting phase of the mitotic cycle cells in active mitosis when exposed to nitro gen mustard complete their division Nitrogen mustard then prevents further mitosis and eventually the inhibited tissue becomes depleted of mitotic figures ' Other evidence of direct toxic action on nuclear mechanisms is seen when the tissue is exposed to high doses of the drug Nuclear fragmentation and abnormal chromatin dispersal are considered as pathologic and incomplete mitosis. No other class of chemical agents has been shown to have such specific action on nuclear activity

Similar effects can be produced by x ray. Thus, tissue reaction to systemic administration of nitrogen mustard is similar to that produced by total body exposure to x ray. There is a vulnerability of the blood-forming organs and of the intestinal tract. Lymphopenia granulocytopenia thrombocytopenia, and moderate anemia occur the seventy of the response depending on the amount of drug administered. Lymphoid tissue throughout the body is unifornly depressed.

It was the above-observed effects which sugge ted the thera peutic use of nitrogen mustard in the treatment of patients with malignant lymphomas Cilman and Philips referred to unpublished data originally reported in 1943, by Gilman Goodman Philips and Dougherty in a confidential military communication concerning the clinical application of a nitrogen mustard compound in the treatment of neoplastic disease. The use of the drug was started in several clinics at once. With the end of World War II, the agent was distributed widely for clinical evaluation. Since then a great number of excellent reports have appeared 2-4.

ACTH stimulates the cortex of the advenals to produce a great many different steroid compound. The effects produced on the body are widespread and profound the physiologic and toxicologic actions of the corticosteroids are induced mainly by the increase in compound F (hydrocortisone) in the circulatine blood.

EFFECTS ON HEMATOPOIETIC SYSTEM

Numerous observations have established the marked effects of ACTH on the hematopoietic system. Short periods of administration of ACTH or cortisone produce a transient decrease in circulating lymphocytes. Prolonged treatment with ACTH results in a gradual return to normal lymphocyte level. Ecsinophils fall in the peripheral blood but increase in the bone marrow. Reticulocytosis and erythrocytosis occur in those conditions which improve clinically under ACTH or cortisone therapy. In idiopathic thrombocytopema associated with normal bone marrow cortisone may cause the number of platelets to return to normal. The thymus lymph glands and abnormal cells of lymphosarcoma and chronic lymphatic leukemia are temporarily sensitive to ACTH or cortisone.

Reports to date indicate that cortisone or ACTH can produce transient repression of lymphomatous tumors including Hodgkin s disease leukemia lymphosarcoma and occasionally plasma cell mysloma Except in isolated cases the neoplastic disease recurs rapidly when treatment is discontinued. Remission under continued therapy may last for several months. In other neoplastic diseases there is no advantage except for an unpredictable and temporary improvement in the general condition and psyche. Steroid therapy produces such widespread and profound metabolic changes in the entire body that the effect on neoplastic tissue is not considered specific or undirectional.

MENTAL REACTIONS

ACTH or cortisone can produce a great variety of mental reactions Some are beneficial and are associated with improvement the general condition others may result from the direct euphorigen ic action of the adrenocorticosteroids Mood changes for better or worse are usually dependent on the basic personality of the natient.

METHODS

The very nature of cancer precludes the use and observation of a single therapeutic entity for the purpose of comparison with another single type of treatment therefore in the group of patients reported here management was not confined to the combined ACTH mitrogen mustard medication but included roestigen therapy surgical treatment hormones and supportive measures when indicated

Specific medication was administered in the following manner 25 mg of AC1H were added to a liter of 5 percent dextrose in distilled water, and this was administered slowly over an 8 hour period for 6 consecutive days. Nitrogen mustard was given on the second through the fifth day, the daily dose was 0 1 mg per kilo gram of body weight the nitrogen mustard medication was prepared immediately before administration 1en cubic centimeters of sterile distilled water were added to the 10 mg ampule of nitrogen mustard The previously calculated dose was withdrawn into a syringe and injected into the rubber tubing of the freely flowing intravenous ACTH infusion Five minutes after the injection, the rate of flow of the ACTH infusion was reduced It was found that nausea and vomiting could usually be avoided by thoroughly sedating the patient in the early evening and giving the nitrogen mustard shortly before bedtime. A few patients received the ACTH intramuscularly 25 mg every 6 hours for 6 days In such cases the nitrogen mustard was injected into the tubing of a freely flow ing intravenous infusion of 5 percent dextrose in distilled water in order to prevent venous thrombosis or phlebitis The glucose solution was discontinued in most cases shortly after the medica tion was administered

RESULTS

Table 1 lists all of the cases of neoplastic disease in 46 patients treated with combined ACTH and nitrogen mustard* during 1952 and 1953 at this hospital One third of the patients had been followed during the preceding several years the remainder were seen for the first time during the course of the 2 year period, 1952 1953. The diagnosis of every case listed was confirmed by microscopic tissue study, and was further confirmed by the Armed Forces Institute of Pathology. Autopsy study was accomplished in 28 of the 37 patients who died while under ong study and treatment.

Our patients received from one to eight courses of combined ACTH nitrogen mustard medication. Responses to therapy were classed as good slight, or none. The lessed as good comprised the patients who obtained relief of pain for more than 2 weeks. These patients were able to return to work or were able to engage in greatly increased physical activity for a short period. Patients who derived slight benefit from therapy consisted of those who noted any improvement whatsoever but less than 2 weeks in dura tion. The physical activity of these patients was not improved. The results listed as none consisted of the patients in whom no subjective or objective improvement was observed.

Comb d berapy gee t d by D W D McCarthy Ci lia C nsults O c

TABLE 1 R lt 46 pat twib plat d t t dwib ACTH t g must d

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Malgra m la ma	1		1	İ	2	0
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Embynal ma (1			1	3	0
S m ma f is	1			1	2	0
Ad oc maf pros	,			1	2	0
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Malgoa maf medua m	1			1	1	0
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T 1	46	17	4	25		9

DISCUSSION

Hodgkin's Disease

In the 10 cases of Hodgkin's disease a critical evaluation of the effects of ACTH nitrogen mustard therapy is not possible. The number of cases is too few, and combination or interim x ray radi ation was used one or more times in 8 of the 10 patients with this disease The end of remission is defined as recurrence of fever or enlargement of lymph nodes, spleen, or liver In this group of pa tients with Hodgkin's disease, with duration of life from onset of disease varying from 16 to 53 months, the average remission after ACTH nitrogen mustard therapy was a little over 7 months (ranging from 2 to 25 months) In the three patients who died under our care (6, 32, and 52 months after the f rst course of ACTH nitrogen mus tard therapy), the length of remission diminished as the disease progressed until a state of resistance developed We were im pressed with the recognized fact that each case of Hodgkin's disease seemed to progress according to a predestined course determined by the nature of the disease in the particular individu al, and that combined ACTH nitrogen mustard therapy, like x ray radiation or nitrogen mustard alone, produced remissions for a limited time Survival to date in the seven remaining cases (24 to 42 months since the onset of disease) may or may not be attri buted to combined ACTH nitrogen mustard therapy

Other Tumors

A single instance of reticulum cell sarcoma with involvement of the stomach was seen. The course was characteristically rapid Treatment with x ray 2 months after onset of symptoms resulted in a remission of symptoms for 4 weeks. Thereafter a course of ACTH nitrogen mustard therapy was completely ineffectual, the patient died at the conclusion of the treatment.

A 34 year old patient with lymphosarcoma appeared at the hospital one month after the onset of superior vena cava obstruction. The chest roentgenogram revealed mediastinal involvement. Relief of signs and symptoms following x ray radiation and ACTH introgen mustard therapy was remarkable, and lasted 5 months. A second course of x ray radiation produced a short remission, and a second course of ACTH introgen mustard thereafter produced a 2 month remission. Further treatment with ACTH and nitrogen mustard did not impede the growth of neoplastic tissue. The patient died 13 months after the first symptoms attributable to his disease

Although grant follicular lymphoma is recognized as the least aggressive form of the lymphomata, the course of this disease as observed in the single case listed in table I illustrates the known fact that it can never be safely regarded as beings Jackson and Parker! considered the condition potentially malignant it is very often the prelude to some fatal form of lymphoma Although lymph nodes and the spleen are primarily involved in the pure form of the disease other internal organs may be implicated Russell! recentify described a case of grant follicular lymphoma with involvement of the stomach, cecum, and sigmoid colon in which there was

perhaps better deserve the term psychotherap; rather than chemotherapy

A recently publi hed report of palliation and remission of cancer with combined corticosteroid and nitrogen mu tard therapy referred to comparable results at this hospital. It is with regret that we are usable to confirm that encoura, ingreport.

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-EDITORIAL

Arme Jurnal f P bluc H lth dth 5 on H lth p 928 July 1955

THE CURRENT STATUS OF VECTORCARDIOGRAPHY

1 A ABILDSKOV Captain, MC, USAR

THE IMPORTANCE of the electrocardiogram in clinical medicine is securely established Extensive experimental and clinical experience has defined both the areas of usefulness and the limitations of these records in the identification of cardiac lesions. It now appears that further progress in the recognition of such lesions necessitates either more knowledge of the basic processes giving rise to bioelectric phenomena, or technical improvements in the registration of these phenomena. The vectorcardiogram (VCG) represents one attempt to improve the registration of electrical events associated with the heart beat

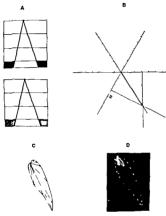
At this time vectorcardiography is in an experimental stage however, there is a sound theoretical basis for the expectation that these records may both simplify and improve recognition of cardiac lesions, and an increasing amount of actual clinical observation supports this expectation. In view of the potential importance of these records to cardiac diagnosis, research programs designed to evaluate and improve the records are proceeding in both civilian and military institutions, and it seems desirable that physicians concerned with the diagnosis of heart disease have at least a general knowledge of these studies and their progress. This presentation does not represent a complete review of the already extensive literature on vectorcardiography but is intended to present briefly and simply some of the funda mental concepts which form the basis of vectorcardiography and to review the results of certain clinical studies which illustrate the potential usefulness of the VCG

THEORETICAL CONSIDERATIONS

Relation of the ECG and VCG. To a limited extent the methods of vector analysis have been applied in the interpretation of electrocardiograms for many years. The routine estimation of the rean electrical axis of the QRS complex which is a measurement having important clinical connotations, and the concept of the ventricular gradient which represents an important part of modern electrocardiographic theory, are examples of vector analysis

F m Villiam Beaumo t Army Hospital El P s T

applied to the electrocardiogram. The application of vector anal vsis to the electrocardiogram is most simply illustrated by the instantaneous electrical axis Figure 1A shows diagrammatic



F gur I The lt fthe ECC nd VCC is II ttd bo diagrammat QRS cmpl f m tanda d ld lad III Smlt me plothepk h ha g mag tud f th th dt I Bihe quatt has be gl tor quatty C bou ucb uch may be plit d f m ECG lead th p | ton | the LCC | D the | nt l plane pr | t of VCC ord of m athod y ll peuth the q lat lit hed method f le tod pl m t

QRS complexes in standard limb leads I and III A pair of simul taneous points on the complexes are indicated by dots and the quantity repre ented by the dot in each lead has a magnitude of three units and a positive sign. These quantities having the properties of sign and magnitude are scalar quantities. The same

information presented by these quantities may be incorporated in a single vector quantity which has the property of specific direction in addition to those of sign and magnitude Such a quantity is shown in figure 1B The triavial reference system shown represents the lead axes of the standard electrocardiographic leads and have been divided into arbitrary units of magni tude Perpendiculars from the magnitude division representing three positive units on the lead I and III axes have been drawn and their intersection defines the terminus of a vector whose origin is at the zero point of the triavial reference system This vector is an instantaneous electrical axis and presents the same information as did the two scalar quantities from which it was derived If several instantaneous electrical axes are derived from pairs of simultaneous points, the termini of these vectors ray be joined in order by a continuous line as shown in figure 1C The resulting tracing presents the same information as did the original quantities from which it was derived, and if one began with this tracing alone the standard and unipolar limb leads of the ECG could be derived With modern cathode ray oscilloscopes and electronic amplifiers such vectorcardiographic tracings may be recorded directly Unlike the galvanometers employed to record ECGs, the beam of a cathode ray tube can be deflected both horizontally and vertically so that vector quan tities representing the resultant of two scalars may be registered directly The frontal plane projection of a VCG recorded from a cathode ray oscilloscope is shown in figure 1D

Because one record can be manually derived from the other it is appropriate to ask why more information is expected from the VCG than can be obtained from the ECG. There are at least three reasons this expectation is valid (1) In the vectorcardiogram recorded with the cathous ray oscilloscope the potential differences giving rise to horizontal and vertical deflections are combined in perfect time phase Even though the general form of the VCG can be derived from simultaneously recorded ECG leads, the detailed configuration of the VCG depends on the points from which the vectors are plotted occurring within n few milliseconds of each other Because time intervals in that range cannot be recognized in the conventional ECG, the VCG is presenting information which cannot be extracted from the LCG (2) Another reason the VCG may provide information in excess of that given by the ECG is the different form in which the same data is presented This may possibly serve the purpose of making certain aspects of the data more easily apparent (3) Still another reason for the expectation that VCGs may be more u eful than ECGs, concerns the three dimensional nature of electrical processes in the heart Conventional electrocardiog raphy has been limited to the frontal plane of the body as re

flected in the standard and unipolar limb leads and to sampling specific areas of myocardium with the precordial leads but has not attempted to view the electrical processes in the heart as a single spatial event Although there is no reason why studies spatial electrocardiography should not be done and would not provide useful information the VCG by combining the in formation from several scalar ECG leads represents a simpler approach to such a study

Methods of electrode placement. To study the electrical phe nomena arising in the heart in three dimensions it is necessary to place electrodes on the body in such a way as to define a spatial reference frame A considerable amount of the research relative to the vectorcardiogram that has been done to date has concerned the advantages and disadvantages of a variety of methods of electrode placement. The reference systems which have been most widely employed are simple geometric figures such as the tetrahedron cube and parallelepiped The use of any of these electrode arrangements necessitates several as sumptions which are known to be in error A comparative study of the reference frames named has shown that the equilateral tetrahedron produces a significantly less distorted indication of the electrical field of the heart than the other simple geometric reference systems Another approach to the problem of electrode placement is represented by the worl of McFee and Johnson These worlers have obtained the pattern of various lead fields using fluid mappers as hydraulic analogues of the body With this information it is possible to select combinations of leads with fields in which undesirable features tend to cancel each other This appears to be a potentially important concept to electrocardiography and vectorcardiography and it may form the basis of the system of electrode placement which will be even tually adopted for future studies

CLINICAL STUDIES

The variety of methods of electrode placement in use makes it difficult to assess over all progress in the clinical study of the VCG There are no areas in which the VCG has been un equivocally shown to provide clinically useful information in addition to that furnished by the ECG There are however sev eral studies which suggest that the VCG may eventually provide such information

The normal VCG Study of the VCGs of normal subjects has furnished an example of the manner in which these records may make certain data more accessible than it is in the conventional ECG As is well known the range of variation of normal ECGs is wide Vectorcardiographic studies have shown that this variation is mainly the result of variation in spatial orientation of electric forces from the heart and that much less variation in the contour of the VCGs themselves exists . This finding not only simpli fies the recognition of normal records but provides a basis for the study of abnormalities

The VCG in intraventricular conduction defects. One of the areas in which the ECG gives less than the desired amount of information is in the precise identification of specific cardiac lesions occurring in association with disturbances of intraven tricular conduction. The difficulty of recognizing myocardial infarction in the presence of left bundle branch block and the precise identification of right or left ventricular enlargement in the presence of bundle branch block are well known It is also difficult to differentiate certain conduction disturbances of the right bundle from right ventricular enlargement. Although it can not yet be considered established, there is suggestive evidence that the VCG may provide more precise data than the ECG re garding these difficult diagnoses A different VCG pattern has been reported in patients in whom other studies established the presence of right ventricular enlargement, than that found in rationts with ECG evidence of right bundle branch conduction disturbances without other evidence of right ventricular enlarge ment ' Left ventricular enlargement in the presence of right bun dle branch block has been reported to be associated with VCGs whose initial portions are similar to those found in patients with left ventricular enlargement without conduction disturbances while right ventricular enlargement in association with right bundle branch block has been found to yield VCGs where the major area enclosed by the QRS loop is located to the right of the iscelectric point."

Subjects with left bundle branch block in whom clinical and laboratory data make the diagnosis of myocardial inferction high it likely have been found to have VCGs whose orientation and contour differ from those of other patients with this conduction disturbance and which are most easily explicable by postulating localized myocardial lesions " In all of these studies adequate confirmation of the presence of specific pathologic lesions is still lacking, nevertheless the evidence that the VCG may find clinical applications in these areas is very suggestive

The 1CG in ventricular enlargement. One of the most charac teristic VCG patterns vet described is that associated with left ventricular enlargement. It is well known that such enlargement may exist in the presence of a normal ECG and it is possible that in at least some instances, the VCG rav suggest its presence when the FCG fails to do so The possibilities that the VCG may assist in the differentiation of right ventricular en largement and conduction di turbances of the right bundle branch

and in the recognition of right and left ventricular enlargement. in the presence of hundle branch block have already been mon troned

The VCG in myocardial infarction As has been mentioned there is suggestive evidence that the VCG may assist in the recognition of infarction in the presence of left hundle branch block There is also reason to believe that infarcts so located that only terminal portions of the ventricular depolarization process are altered may be recognized by the VCG In the case of the ECG the marked variability of all but the initial portions of the normal QRS complex makes it impossible to recognize definitely those lesions so located that only the terminal QRS is affected The similarity in contour of VCGs from normal sub nects suggests that variation in the contour of portions in the VCG other than the initial one may be recognized in these records more easily than in ECGs

STIMMARY

There is a sound theoretical basis for the expectation that the vectorcardiogram (VCG) may provide clinically useful in formation in addition to that furnished by the electrocardiogram Clinical studies to date support this expectation and there is suggestive evidence that the VCG may be useful in the recog nition of ventricular enlargement and infarction in certain in stances in which the ECG does not reveal these lesions. There is also evidence that the VCGs of normal subjects are less vari able than are normal ECGs and this may serve to both simplify and improve the recognition of normal electrical processes in the heart

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CHRONIC DYSENTERY DUE TO MIXED PARASITIC INFESTATION IN CHILDREN

Proctoscopic Findings

ROBERT O OSEASOHN Capiain VIC AUL
BERNAPD T GARFINAEL VI D

FTERVINA FIGUEROA I D

PIRECT visualization by means of the rectosigmoidoscope is an established aid in the recognition of parasitic in fections of the colon. The appearance of the mucosa in specific disenteries such as arrebic and bacillary, is well known't However, no controlled observations of findings in mixed parasitic infestation in children are available. The purpose of this report is to call attention to the lack of specificity of mucosal findings in mixed infestation.

METHODS AND MATERIALS

This study comprises an analysis of 206 children consecutive is admitted to the clinic of the San Juan Cits Hospital because of chronic bloody diarrher. The group consisted of 129 boxs and 77 gris with a mean age of 3.5 years, almost half of these children having had symptoms for nearly a year.

After careful history taking and physical examination, proc toscopic examination was done without prior preparation of the patient. The aspirated fecal material or exudate was immediately examined microscopically and also was sent to this laboratory for isolation of shigella or salmonella bacteria or Endanoeba histolytica

RESULTS

Despite lack of prior preparation, adequate visualization of the mucosa of the rectosigmoid was possible in 157 (77 percent) children Parasitologic study of fecal material from the remaining 49 (23 percent) children however, gave almost identical per centage results (table 1) No pathogens of the enteric group were isolated

The boys were infected with more species than the girls 1 17 protozoa and 1 04 helminths per box and 0 90 protozoa and 0 80 helminth species per girl

For Tricin early Medical Locatory U.S. Army San Jun J. R. In Cob a w 122 Toodle d.Rd. Asklad Mass. Dr. Garl k. 1 14 / N. Kink lief wy Bld king highwy d Tterma. St. L. 28 M.

TABLE 1 P tlg | dg 206 bld m dp t p lly u tb tp p p t

		T m	l d	
Prafd	Adeq (157)	t ly	Indiqaly (49 par)	
	N mt	P t	N ml	Р
P toz				
Ed moebah lyt	39	24] 13	26
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Edlma	12) (12
Chlma m. I	19	14	14	28
Typa mhm	44	28	1)	38
Etmoahm	9	([1	1 2
Bladum I		3	1	2
G d lmbl	32	20	J	J
II Im th	ì	ì	ì)
Ts hur h	126	80	39	78
A Imb d	57	36	21	42
Sh t mama	l î	1	0	1 ~
H kw m	14	9	3	1

The proctoscopic findings in children in whom visualization was adequate (table 2) failed to disclose any difference which could be attributed to E fistal fixed. An equivalent number of patients with ulceration were found in all groups

TABLE 2 Fnd g 157 blden w b bro d mbe whom

F ndang	T me b sv d (so 157 p)		E he lye				PhEh lyr	
			P (39 p)		Ab (118 ps ot)		(in 18 pa nt)	
	Numb	P	Numb	P	Numb	P	Numb	Р
Hrthg Mucus UIer Fasbluc Adul Thura	75 28 8 15 85	48 18 3 35 54	20 6 3 11 28	51 15 8 29 71	55 22 5 44 57	46 18 4 37 48	3 3 1 9	16 16 5

All bur p or had T hu

Table 3 presents tool findings which are often rejarded as surgestive of the presence of E histolytica While there is a strong suggestion that white blood cells are less frequently seen and Charcot Leyden crystals more frequently seen in stools of

those with *E. histolytica* infection, the differences are not statistically significant. The material obtained through the procto scope was cultured on Nelson's redium and on the egg slant medium *E. histolytica* was thus isolated in 3t of the 52 children with amedic dysentery. In addition, stool cultures on artificial media disclosed seven cases not recognized by means of routine examination.

TABLE 3 Eindings in stools of 208 children will clonic diarrh a and are biasis

Find ngs in stools	Times observed in children with chronic diarrhea					
	In 206 p	atient	In 52 patients with E histolytica			
	Number	Percent	Number	Percert		
Red blood cells Whit blood cells Chircot Leyde	11 <i>(</i> 30	5C 3 14 G	30 4	57 7		
crystals	59	28 7	20	38 4		

CONCLUSION

From an analysis of proctoscopic findings in a group of 206 children with chronic bloody diarrhea due to mixed prasitic infection, it would appear that there is no distinguishing mor phologic feature which can be correlated with a specific infectious agent Ulceration of the colon was not confined to children infected with E histolytica

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neurotics build castles in the air psychotics live in them and psychiatrists charge them both rent

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OSTEORADIONECROSIS AND THE DENTIST

HERMAN KAPLAN L t na t j or g d (DC) USNR

THE DENTAL profession has been fully informed about its responsibilities in the detection of oral cancer Information about the problem has been widely disseminated so that today the dentist and the dental student are well aware of the incidence of the disease and what they can do to help combat it It is generally being recognized that the co operation of different specialties of medicine preferably as a group or board sitting down together and deciding on the problem at hand and its even tual treatment will remove the responsibility from one individual whose knowledge and experience are necessarily limited Today the two definitive methods for treating cancer are radiation and surgery Great strides in radiation therapy have been made in the field of cancer of the oral cavity Watson and Scarborough said, Neoplasms having their origin in the tissues about the head and neck are particularly well suited to irradiation measures " This statement should be modified somewhat because today surgery has stepped in to handle many cases which would not be cured by radiation therapy

With the advent of extensive radiation procedures about the head and neck there has been a concomitant increase in cases of osteoradionecrosis as a complication in a review of 1 819 cases treated by the Head and Neck Service of Memorial Hospital New York N Y it was found that 935 patients (13 percent) developed osteoradionecrosis

The effect of radiation on bone development has been known for some time In 1905 Tribondeau and Recamier were able to show that radiation to the skull of a newborn cat inhibited the growth of bone in that area Cluzet in 1909 irradiated fracture sites both before and after fracture was induced Macroscopic and microscopic analyses showed slowing down and in some in stances complete absence of callus formation. This indicated that something had occurred to inhibit the repair mechanism essentially as related to the periosteum Wilkins and Regen demonstrated that irradiation caused a drop in phosphatase activity after fracture as well as in growing dog bone. In 1999

F m U S N 1 H p tal S Albans N Y L Kapla μ w boad be U S S R nd lob.

Regaud' of the Curie Institute showed that the maxillary bones were susceptible to necrosis and infection during treatment of intraoral cancer with radiation Bone, he thought, was more vul nerable to radiation than skin He believed that the calcium and phosphorus in bone set up secondary radiations of a more caustic nature causing damage to the vital parts of the osseous tissue Regaud, it seems, was very close to the truth

In 1924 Blum' reported a case of osteomyelitis of the maxilla and mandible which was caused by some radioactive substance used in the manufacture of luminous dials for watches This was part of the now famous incident of radionecrosis developing in people who worked for a luminous dial watch company workers painted a preparation of 2 5 mg of radium bromide per 100 ml of solvent on watch dials and hands The brushes were compressed between the lips and buccal mucosa so as to obtain a fine point Thus these people were exposed to a considerable amount of radiation However the cases reviewed also showed such predisposing factors of pyorrhea, mouth infection, and dental caries 7 Dalby and associates 8 Strauss and McGoldrick. and Baker' recorded cases of fracture of the femoral neck fol lowing irradiation for pelvic and gynecologic cancer They strong ly suspected that these fractures were due to diminution of vital ity of the femur due to irradiation. It should be stated, however, that not all investigators agree that bone is so susceptible to radiation Flaskamp, i in 1930, said "The healthy bone of the adult appears to be very radio-resistant. He was backed up by Colwell and Russ "Adult bone is relatively resistant to x ray and injuries from this cause are rare " These opinions were in the minority, however, and a preponderance of evidence soon began to mount, indicating that a tumor dose of radiation, t e enough roentgens to kill a tumor also affected bone of that area in a very deleterious manner

In 1939, del Regato' dealt with the dental lesions complicating radiation therapy. He indicated that healthy teeth in an area of radiation easily become hypersensitive, abraded, carious and sometimes completely crumbled. The mechanism has been ob scure, although theories of destruction of the edontoblasts of dentine, atrophy of salivary glands lowering of the pH of salivar, and extensive use of fruit candles to compensate for diminution of saliva have been advanced. The importance of this observation is the indication that infection is an added danger to a mandible or maxilla which has been irradiated and devitalized.

The exact mechanism of osteoradionecrosis is not known why some people are apparently more radiosensitive than others is also not known However the physiology of the mechanism seems to indicate that it is a vascular phenomenon. That bone does lose its vitality is indicated by a diminution in calcium and

phosphorus exchange Comrander H C Dudley (MSC) USN working with radicactive phosphorus indicated that bone which has received a tumor dose (usually from 3 000 to 4 000 r) will not pick up any radicactive phosphorus When a scintilloreter was used over areas of irradiated bone the count was very low as compared with normal bone indicating that bone metabolism was abnormally poor Normal bone however picked up a good deal of the tagged element The physiology and microscopic anatomy of irradiated bone were well discussed and evaluated in an article by Esning.

In order to understand bony changes due to itradiation it would be best to review superficially the structure of bone Bone coll are derived from mesenchymal embryonal cells which form os tooblasts and subsequently become enclosed in a space or tooblasts and subsequently become enclosed in a space or bone. These cells are connected with one another vertically and bone. These cells are connected with one another vertically and bone are haversian systems which contain blood and lymph vessels in the interior of the bony system are the highly vascular mar row spaces. On the outside of a bone is a sheet of osteoblastic and fibrous tissue called the periosteum which is also highly viscular We see that bone is essentially "a rich vascular network enclosed in a rigid framework of bone tissue the structure of which makes it highly vulnerable to the effect of irradiation.

After irradiation there is an initial hyperemia of blood vessels followed by induration and relative aniema. There occur subsequently a swelling and mucinous degeneration of collagen fibrils which are an integral part of the walls of blood vessels. There is an occlusion and rupture of capillaries in the area. These phenomena led Fwing' to proclaim. I have become con vinced that irradiation acts very largely through vascular disturbance.

The perioscum becomes thickened and hyaline The layer of exteoblasts on the inner surface usually is found to be absent. The bone marrow is deprived of cells and undergoes fatty degeneration. The marrow space is increased and no new bone appears. The bone itself shows marrow and irregular trabeculae with obliterative sclerosis of the nutrient vessels. The bone cells show degeneration and stain poorly with hematoxylin and eosin. The lamellar bone appears hyaline and very brittle and canalicular colosed.

The entire picture ties in well with the phases of osteoradionecrosis. With the blood supply occluded factors that play a role in radioresistance are lost. The osteoblasts no longer function and no new bone forms. The bone becomes devitalized and may remain quiescent for years until trauma or infection is superimposed and then the bone sequestrates quickly.

The question of osteoradionecrosis, then, is resolved down to devitalized bone caused by radiation which is then aggravated by a superimposition of infection or trauma. The development may be rapid or, as previously stated, the condition may be dormant for years and then spontaneously occur Cases have been known to be dormant for 6 to 10 years before osteoradionecrosis de velops The long delay in sequestration and solution of de vitalized bone can probably be explained on the basis of injury and sclerosis of blood and lymph vessels in the haversian sys tems, periosteum, and surrounding tissues. It seems evident that because calcium makes up 85 percent of bone, when bone is irradiated the calcium transforms the hard, penetrating, primary radiation to a more caustic and selective type of secondary radi ation The periosteum, therefore, and the inner layer of cells receive the primary radiation and the maximum effect of the caustic secondary rays As Regaud16 said "The irradiated bone burns and burns the periosteum and mucosa enveloping it "

It should be noted that of all the bones of the body, none, except perhaps the neck of the femur, is as dense as the mandible Therefore, the bones of the head most frequently altered by raduation are those of (1) the mandible (2) the maxilla and (3) the calvaria The mandible because of its shape, compact composition, and presence of one nutrient artery, is more susceptible than any other bone of the head

Clinically osteoradionecrosis may range in severity from a small sequestrum, which will exfoliate, to an ulceration of soft tissues and exposure of bone associated with a continuous, dull unrelieved pain Trismus swelling, draining sinuses, and later pathologic fracture then death may occur. The bone infection may last as long as 8 years with drainage, yet recovery may occur. In the series of 125 deaths at Memorial Hospital, bone complications were a factor in the cause of death in 106 patients (85 percent), and 12 patients (9 6 percent) died as a direct result of osteoradionecrosis and free of cancer.

What then shall be the course of action from a dental view point in patients to be irradiated and patients who already have been irradiated? Shall we extract teeth before irradiation procedures or try to save them? Shall we extract teeth in people who have been irradiated and if so what will be the outcome?

There seems to be unanimous agreement that all infected carrous and questionable teeth be extracted in the area to be irradiated. This statement can be found in articles by Stewart, and others.

Many authors believe that the ideal procedure is to render the mouth edentulous with the exception of limited lesions which

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PEPTIC ULCER IN MILITARY PERSONNEL

Incidence and Management

BENJAMIN H SULLIVAN Jr Colonel MC USA
EUGENE L HAMILTON Lieutenant Colonel MSC USAR

SINCE the passage of the original Selective Service Act on 16 September 1940, the probability of military service has become a factor in the life of every American man The dis eases which affect an individual's eligibility for service or effi ciency in service are a proper concern of military and civilian physicians alike In recent years there has been a significant increase in noneffectiveness in Army personnel due to peptic The average daily noneffectiveness per 1,000 average strength was 0 44 for the period from 1942 to 1945 and rose to 0 51 for the period from 1950 to 1953 Days lost per admission were 59 and 64 respectively Peptic ulcer was the cause of 1 percent of the total noneffectiveness from disease from 1942 to 1945 and of 3 percent from 1950 to 1953 It would seem proper to examine data bearing on the occurrence of peptic ulcer in various military settings to seek an interpretation of such variations as may be noted, and to consider measures for countering the loss of effectiveness due to this illness

INCIDENCE

The number of new cases of peptic ulcer in the U S Army has varied with the type of military activity. The admission rate is low in peacetime, high in periods of intensive training and in wartime. Admissions of Army personnel to hospital or quarters status for peptic ulcer during the years 1937 to 1953 are given in table 1. The data were obtained by tabulation of individual medical records submitted at the time the patient was discharged from the hospital. An effort was made to recognize new cases, and readmissions are not shown. The number of admissions per thousand mean strength per year vary from 1.50 in 1940 to 3.36 in 1943, then fall to 1.54 in 1946 and rise again to 3.07 in 1958. Grouping the data as in table 2 serves to emphasize the increase in the rate of admissions for peptic ulcer during periods of threatened or actual fighting.

DISCUSSION

From the data available it seems that the incidence of peptic ulcer in the U S Army does not exceed that in the civilian pop ulation There is an increased incidence in both groups during penods of threatened or actual warfare, followed by lower rates when this activity is terminated The social pressures which tend to disrupt satisfactory adjustment in the wartime civilian community are familiar to all the military training camp presents certain additional stresses disruption of family life pursuit of unfamiliar military activities under new and frequently changin. supervisors and often the lack of a clear and cogent personal conviction of the necessity for these activities Instability of assignment associates and environment and the uncertainty of the future are important aspects. Many of these features are pres ent in overseas theaters, but when the theater becomes active the soldier s presence and activity have an obvious purpose the social ties with his comrades become very strong and he identifies closely with his unit. The admission rate for ulcer falls If only combat troops were involved in the rate reduction one might be tempted to explain it by assuming that many soldiers would ignore their symptoms and many medical officers would be un villing to excuse men from front-line duty except in extreme circumstances These factors are probably important but it must be remembered that the reduction in rate applies to service as well as to combat troops and that the former greatly outnumber

It is generally accepted that emotional factors are related to ulcer genesis and recurrence. Certain factors in personality as well as certain environmental situations seem to precipitate ulcer recurrence in susceptible persons. No true ulcer type" of per sonality has been recognized because ulcer occurs in the pres ence of many different personality patterns Physicians portuge experiences with World War II soldiers with ulcer distinguished two groups of patients (a) The regular Army volunteer soldier with considerable service and good motivation who had characteristic symptoms responded quickly to medical treatment and could be returned to duty and (b) the nonvolunteer with poor motivation who had atypical symptoms remained sympto matic until his release from service was assured and entered the hospital repeatedly if an attempt was made to return him to duty In 1953 Barrett at Brooke Army Hospital studied 40 duodenal ulcer patients for adequacy of social adjustment in their family, school job, marital and military relationships She clas sified her patients into two groups (a) Those with unsatisfactory social adjustment prior to the development of ulcer This group included most of the patients with less than 2 years of service In one fourth of these patients stressful situations were identi

fied which might have played a role in the precipitation of ulcer (b) Those with previou-ly satisfactory social adjustment were predominantly volunteers with more than 2 years' service. Areas of emotional conflict which might have been important in ulcer gene-is were recognized in % percen of the group in 73 percent these were of a nonmilitary nature. Compar was not a factor in the initiation of elect or in its recurrence. Other strosses peculiar to the military played only a small role in contrast to the hazards of personal life uncluding marital and family difficulties Motivation for military service was measured by the patient's expression of his attitude toward his current duty assignment toward entering the service and by his feelings of fristration or discrimination. It was poor in co percent c those with less than 2 years of service and in 60 percent of the others. Those personality traits said to characterize the patient with ulcer-striving for success fear of failure assumption of re-ponsibili v-were found in only half of her patients who had made a satisfactor. social adjustment and not at all in the poorly adjusted group

Although the two groups of patients described by Berk and Frediani and by Friedmani correspond well with the grouping proposed by Barrett and confirmed by current clinical experience it is probable that the difference between the groups is quantitative rather than qualitative. The patients of each group have failed in their adjustment and the inability of the physician to identify the area of emotional conflict is indicative only of its profundity.

The unusually high admission rate for ulcer in Europe during 1953 would seem to be explicable in the light of the foregoing helice listed the following environmental factors as contributing to ulcer occurrence, particularly in troops stationed in France (a) difficulty in adjusting to primitive living conditions after being accustomed to modern comfortable facilities (b) difficulty in obtaining milk and ambulant ulcer diet when assigned to field units (c) monotony of life in rural French villages (d) difficulty in finding suitable family quarter, and of living on the French economy He further states. The stimulation of combat and the ability to perceive fire hand the necessity for being in uniform may cause some patients with ulcer to sublimate symptoms which during monotonous periods of routine training flare up One wonders if the same factors may not be operating here in Europe which thus fa 10 a noncomba ant area where the primary activity of the troops In addition to the factors helioe has advanced one must consider that American troops were no longer popular with either the French or the German civilian population. The Army was steadily loving the a tractiveness as a career fring benefits" were being curtailed and re-enlishments were a a very low rate The Europe- attorned soldier was engaged in a rigorous training program He was rejected by the local population his personal life disrupted by economic and other difficulties and he was living in a tense international political situation that he was powerless to influence

RECOMMENDATIONS FOR MANAGEMENT

A certain therapeutic attitude is required of the physician if patients with peptic ulcer are to be used as soldiers. The physician must believe that these men can perform effectively despite recurrent attacks of illness and he must define for the patient the role of illness in a manner which does not create a chronic in valid and which minimizes the secondary gain from the illness. To accomplish this an excellent doctor patient relationship will be needed.

Palmer and associates have shown that many soldiers have long and useful military careers despite the handicap of recurrent peptic ulcer wise and colleagues evolved a plan of outpatient management which reduced the noneffective rate due to peptic ulcer to 0 10 per thousand average strength at their post They emphasized again the point made by Barrett that personal problems rather than the stross of military service are the important precipitating cause of ulcer recurrence in most soldiers

If we select a favorable group of patients to continue in the military service what should we do to minimize the time lost through ulcer recurrence? The use of dietary programs and drug therapy during periods of remission of symptoms has failed to prevent ulcer recurrence in civilian life and is often impracticable in military life Limitation of assignment with a view to preventing military stress does not seem important but may serve to avoid some of the problems of personal life which arise from the dis ruption of the family It is not easy to give an answer here for often ulcer recurrence seems to be precipitated by a visit home or the return to family from overseas duty Perhaps the most im portant thing accomplished by assignment restriction is to keep the patient under the care of the same physician who can give him support as needed as well as early treatment of recurrent symptoms thereby possibly avoiding hospitalization. In any case there does not now exist a provision for limited duty as such and past experience has not demonstrated this to be an effective method of preventing recurrence These restrictions are not only unnecessary but undesirable If one elects to return patients with ulcer to duty it must be recognized that the man probably has roentgenographic evidence of deformity which he can use to avoid unpleasant assignments and that he will have recurrences of his ulcer which may require hospitalization from time to time

The important points in the management of a soldier with peptic ulcer would seem to be

- 1 To establish the diagnosis by roentgenographic examina tion using repeated studies as needed to confirm the diagnosis and to establish the fact that the ulcer has healed
- 2 To treat the patient by conventional measures of diet antacids and antispasmotic antisecretory drugs until he is symptom free, and healing is complete as shown by roentgenographic examination
- 3 To develop a strong doctor-patient relationship by the "therapeutic interview" and to obtain sufficient knowledge of the patient so that his problems and the areas of situational stress responsible for recurrence of his ulcer can be understood. If the physician does not have the time or inclination for this phase of treatment a medical social worker may be used as an assistant to obtain the information but all interpretations should be given to the patient by the physician Any patients with personality defects which warrant administrative or psychiatric separation from the service should be discharged as soon as possible
- 4 To relieve at least temporarily through superficial ventilation psychotherapy the resentment these patients harbor. This is probably as important as healing of the ulcer crater and sometimes takes longer
- 5 To redefine the role of illness for the patient Many sol diers think of an ulcer as something as bad as cancer and incurable Because dietary restriction and drug therapy during periods of remission are ineffective in preventing recurrence the physician should assure the patient at the proper time that he is well that he can eat anything a reasonably prudent man would eat and can engage in full military duty without detriment to his health. He may be warned that under some strong emotional stress he may have a recurrence but that under proper medical care the ulcer will heal

The disposition of the military patient with an ulcer is determined by three elements (1) the disease, (2) the patient, his motivation and emotional reactions, and (3) the physician and his knowledge and attitudes about the disease and about the patient A study of the disposition made of the patients with ulcer in a large hospital or in the Army as a whole reflects primarily the attitude of the physicians, to a lesser extent the motivations of the patients and very little the effect of the disease itself. One is led to speculate on the possibility that duodenal ulcer occurs and recurs uninfluenced by any of our measures and without regard to the patients relation to the military service. The approach to treatment recommended here may have some beneficial effects—
if not in reducing the ulcer recurrence rate, at least in making

the patients more effective soldiers during remissions. The program would be immeasurably strengthened if it were administered close to home-by the unit surgeon or at the outpatient clinic at the soldier s home station

STRUCKER

There has been an increased incidence of peptic ulcer in the U S Army in recent years accounted for almost entirely by in creased incidence among troops stationed in Europe Intensive training a tense international situation and other factors con stitute a chronic stress which may be of causative significance narticularly because the patient can take no action to relieve this tension

Large numbers of soldiers throughout the Army are rendered noneffective by peptic ulcer It is in the interest of the military service to retain the services of these men when this can be done economically i e as long as hospitalization for recurrent ulcer is supportable Dietary regulation antacid and antispasmotic drug therapy and restrictions on place or type of duty often are not practicable and probably do not prevent recurrence

Selection of a soldier with an ulcer for retention in the service based on study of his previous social adjustment and his person ality is recommended. During this study a good doctor patient relationship will develop which can be used to alter the patient s concept of his disease minimizing its importance stressing his ability to do full duty in the periods of remission and endeavor ing to have the patient recognize the relationship of emotional stress and symptoms Patients with alcers who have psychiatric grounds for separation should not be retained in the service

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MEDICAL AND DENTAL OFFICER CAREER INCENTIVE PROGRAM

RALPH L CHRISTY Commander (MC) USN

THE PROVISION of adequate medical and dental care for the Armed Forces is being seriously threatened by the alarming shortages and losses of career medical and dental officers. The problem is common to all three of the armed services, but was particularly emphasized in a letter of 23 March 1955 from the Surgeon General of the Navy to the Chief of Naval Personnel and the Secretary of the Navy, which pointed out that some 300 Regular Navy medical officers had resigned in the past 20 months, while at the same time only 37 new regulars were commissioned. The Dental Corps lost 150 officers, or four times the replacement rate, over a period of 33 months.

The Chief of Naval Personnel concurred in the seriousness of the problem and recommended accomplishment of all possible administrative actions to aid the situation, along with the for mation of a triservice group to recommend additional corrective action and required legislation with the support of the Secretary of the Navy and his approval of the recommendations, the matter was presented to Frank B Berry, M D, Assistant Secretary of Defense for Health and Medical, the Honorable Carter L Burgess, Assistant Secretary of Defense for Manpower and Personnel, and to the Department of Defense Health and Medical Planning Council

As a result, the problem was assigned by the Secretary of Defense to the Task Force on Career Incentives, which handled the Career Incentive Pay Act of 1955 and the Survivor Benefits legislation The Task Force was headed by a line officer, Rear Admiral E W Grenfell, USN, and was augmented by representatives of the medical departments and of the personnel branches of the three services thus, it included both line and medical representation The Deputy Chairman, and officer who made the majority of the presentations, was Captain David L Martineau, USN

The Task Force has conducted a detailed exploration of the problem of attracting adequate numbers of career medical and

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dental officers for the Armed Forces This was studied from all rossible sides including the professional and personal aspects the promotion retirement and compensation factors composing the economic aspects and the over all factors involved in the acceptance of military life and a military career

NEED FOR CAREER MEDICAL OFFICERS

First an examination was made as to why career medical and dental officers were needed and as to where and to what extent civilian physicians could or should be used Career military medical officers are required for several reasons including the following

- 1 One third of our 2 850 000 military personnel are overseas or on the seas and require uniformed medical personnel to provide medical care and to ensure healthy fighting men for combat readiness While uniformed reserve physicians can provide much of this care continuity and need for military and clinical ex perience require large numbers of redical personnel on duty for a full career or at least for longer periods than now provided through the o year draft
- 2 There are 2 000 medical facilities or units throughout the world many in remote locations each requiring one or more military physicians
- 3 Many specialties such as aviation submarine and atomic medicine medical logistics and readiness planning are for the most part peculiar to military medicine This was well sum marized in a recent speech by the Honorable Dewey Short rank ing minority member of the House Armed Services Committee who said

We have to have dictors who know how to prepar for the m dical support of an mphibious op ration We have to have docto s who know all of the medical problems of log stical s ppo t of land on at n we have to have doctors who ar familia with the human physical limit to s in the probl ms of p ce we have to h ve doct s who are experts in feld sanit t on pre entive medicine and all f our doctors must have some conception f what a milt ry ig nizat on is how it fun tio s and what their respons b lities would be if they were called upon to take command of a medic I battalion

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fD f Med I m mbe in lud Col J H. M N h MC USA C md R Cb ty (MC) USN CIECF USAF (MC) CIR J Be ford USAF (MC) d Dr E K Cush g D pury A ta S tary f Def (Heal h d Med 1) __Editor Not

So all the time of a doctor in the Armed Fotces is not confined to the treatment of people who are ill perhaps some doctors spend most of their time treating patients but when that doctor is serving in that capacity another doctor is study ing a supply problem or a study involving the results of under water demolition or the proper way to treat victims of nuclear warfare

So it is not quite fair to our aimed services to compare the ratio of physicians to the civilian population and then conclude that the ratio in our aimed services should more nearly approach that ratio The problem in our Aimed Forces is to keep our people healthy and not wait to treat them after they are sick

4 Medical care for large numbers of dependents must of neces sit, be furnished by military medical officers overseas, as well as at isolated bases in continental U S and at activities in continental areas where civilian facilities and professional per sonnel are inadequate to meet the needs

The use of civilian physicians in every possible position, including all or most dependent care positions, was not con sidered desirable Civilian physicians would necessarily be started at salaries from \$1 400 to \$2,600 per year higher than the present starting salaries of military physicians and thus differential pays would be created among military and civilian physicians working in the same hospitals, dispensaries, or clin ics In addition to this great disadvantage, such a solution would tend to concentrate the most satisfying and desirable profession al billets in the hands of civil service physicians, thus leaving sea and foreign shore duty, and small dispensary and remote continental duty for military medical officers. This would reduce the professional competence and proficiency of those military medical officers who did remain under these circumstances, and in addition would tend to result in the loss of the greater portion of present or future career officers

THE PRESENT SITUATION

Study of the present situation disclosed that in the past 3 years two regular officers have been lost for every replacement 1 turnover of nearly 45,000 medical and dental officers entering and leaving the services in these 3 years, to fulfill a mission requirement of some 16,000, has superimposed a territic problem of training and retraining processing, security checks, loss of time in extra travel, et cetera. This is expensive in dollars and is wasteful of scarce, highly trained manpower.

With 96 percent of the gains in medical officers in this period coming solely from compulsory service extensive efforts have

been made to use physicians most efficiently and thereby reduce as much as possible the numbers to be drafted

An over all ratio of 3 0 physicians per 1 000 troop strength was also imposed on the three medical services to economize still further in the drafting of civilian physicians However the relatively short turnover period of 2 years combined with the 3.0 per 1 000 ratio has made working conditions for the military physicians much less attractive with longer working hours much less time per patient and resultant generally reduced profession al satisfaction It has also forced the neglect of many aspects of the primary military medical mission. The large turnover of personnel often requires an excessive number of transfers in cluding the regular career officers who usually are the only ones available for filling vacancies as the reservists come and go This instability of assignment combined with necessary sepa rations from family on sea and foreign duty has been a great deterrent to the acceptance of a career as a military medical or dental officer

PRESTIGE AND PAY

The study also showed that the prestige of a military medical career has deteriorated materially in recent years. The prestige of a medical or dental officer has been adversely affected par ticularly in regard to rank because he is generally several years older than most other officers of his grade Because the status of the military medical or dental officer must be based to a large extent on rank a condition not encountered in civilian life a military career has been considered to be seriously lacking in this respect. The necessary compulsory aspects of the special doctor draft law has also had its effect on the morale of career officers and has contributed directly to the lowered prestige of a military medical career

The final overwhelming factor in the failure to choose a mili tary career has been the inadequate financial return in relation to the years of education and training and in comparison with civilian opportunities. Heretofore there has been a reluctance with the services to seek additional special pay because of possible reaction of other officer groups However detailed examination revealed several factors in this situation Present pay scales and promotion criteria are predominantly geared to length of service Thus a medical officer who requires 4 years of medical school and an internship to complete his education after graduation from college is 5 years behind his contemporaries in the service who entered immediately after graduation from college. As a result for example during the first 4 years of active duty after com pletion of internship, a naval medical officer earns less money even with the presently authorized \$100 monthly doctor special

policies by increased encouragement of attendance at profession al assemblies and seminars and by provision of years (including internship) constructive service for promotion purposes (in stead of 4 years) for medical officers and 4 years (instead of 3 years) for dental officers in recognition of their additional years in professional reducal or dental education. The latter will apply at present only to newly commissioned officers Sim ilar credit for officers already on active duty will require legis lation

Legislation has been recommended by the Department of Defense and is now under study by the Bureau of the Budget to provide this additional I year credit for promotion purposes to medical and dental officers now on the active lists. The proposed legislation would also provide longevity credit for pay purposes for these years of postgraduate educational credit In addition in order to compete with the higher incomes avail able to civilian physicians and dentists, or with the generally greater earnings under better or more stable working conditions in other kederal medical services the proposed legislation would provide for an additional monthly contract pay up to \$150 for agreements to serve for periods of from 3 to 9 years. The details as to the exact amount and form of the additional pay are still under consideration and subject to change by the Bureau of the Budget or Congress

BENEFITS OF THE PROGRAM

With the adoption of this whole program including the legis lative aspects a young physician would enter the service after completion of internship in the grade of Captain (in the Army or Air Force) or of Lieutenant (in the Navy) at a starting salary of about \$775 per month This salary compares favorably with the starting salaries of \$620 to \$700 per month of civil service physicians in view of the generally longer working hours of mili tary physicians combined with the necessity for rather frequent moves separation from family and assignment at times to es sential but professionally less satisfying billets. The proposed military medical incomes however would still be considerably below those available in civilian practice

As the present excessive turnover of medical officers is brought under control service physicians should have the advantages of nore regular and somewhat more reasonable and shorter working hours than do their counterparts in civilian private practice. The value of the military retirement for physical disability or after 90 or 30 years or more of service is a distinct advantage to the military physician or dentist Free medical care for the service man and free or low cost care for his family commi sary privi leges and certain urvivor and other benefits also favor his

choice of a service career The opportunity to travel for duty in different parts of the world on a reasonable rotation basis is also considered an advantage by many It is obvious however, that under present pay scales and conditions, these latter advantages alone have not been sufficient to attract adequate numbers of career medical and dental officers.

It is believed that the provision of adequate career incentives by the enactment of legislation along the lines proposed, in addition to the other improvements in the attractiveness of a military medical or dental career, will make possible an increase in the number of career reserve or regular medical and dental of ficers to about two thirds of the requirements instead of the present less than one third, and thus will provide adequate stability. Such a career corps will eliminate the need for the special doctor draft, and the remaining requirements can then be filled by the draft of physicians and dentists deferred under the regular draft to complete their education.

A workable solution must and will be found Adequate medical care for service personnel cannot continue to be provided under present conditions

ADVICE TO YOUNG WRITERS

In promulgating esoietic cogitations and articulating superficial sentimentalities philosophical and psychological observations beware of platitudinous ponderosity jejune babblement and asinine affectations. Let your extempo raneous discantings and unpremeditated expiations have intelligibility and vivacity without thrasonical bombast Sedulously avoid all polysyllabic propensity psittaceous vacuity and ventriloquial verbosity. Shun double entendre imprudent jocosity and pestiferous polluting profanity either obscure or apparent Don t call names or use big words but talk plainly sensibly and truthfully All of which is remind ful of Disraeli's philippic for Gladstone. He was a sophis ticated thetorician inebriated by the exuberance of his own verbosity.

-Quoted by ERNEST J ROSCOE in Science p 851 June 11 1954

AIR FORCE HOSPITAL FOR TRI SERVICE CARE

MAJOR GENERAL DAN COGLE USAF (MC)
Surge G ral U ted Spat A Fo

In THIS land of historic milestones we are assembled for a dedication ceremony which in itself is an important mile stone for Alaska for national defense, for the Air Force for military medicine and for the productive relationships be tween civil and military interests as well as between our three separate military departments. It is fitting that this significant Air Force hospital dedication ceremony take place in Alaska where the pioneer spirit that has made America great is still vital as was the spirit of those men and women who first peopled the forests and plains of our continental United States.

This dedication is a pioneer experience for our Medical Service as it marks the opening of the first major hospital in an extensive Air Force building program designed to support an ever expanding military medical responsibility It marks the first new major Air Force facility designed and programed to serve joint area re quirements of three separate military departments. It serves as concrete notice to the American people as do many other hospitals of the Army Navy and Air Force that the various medical services are co-operating with each other to give American military men and wormen a health and medical service worthy of the world's finest and most deserving citizens. You should know that many of our airmen are cared for by the Army and Navy and in turn. I can state that outpatient visits of Army active duty personnel at Air Force clinics now average more than 20 000 per month

I must hasten to add that there is no intent or need of merging the military modical departments Such services are necessarily part and parcel of the armed force to which they belong Thoy must be service identified in all phases of planning training and support of combat missions or weapon systems peculiar to each department or to the global and operational environment where each must serve

Military redicine is not a commodity to be purchased on the opon market any more than is the infantry division the battle ship or a combat wing Military medicine is a part of these

Add h d d ca ! f h new hosp tal Elmendorf Air For Ba A hor g Alaska 4 Sept mb 1955 As the native meaning of the word Alaska implies, this is truly "The Great Country," and I am sure that in this setting and on this occasion we will capture a strong sense of dedication—not of this building alone, but of our very lives, minds, and hearts—to the protection of freedom, of national unity, and national security that these military forces represented here today have so long been dedicated to preserve In this, The Great Country, we are inspired by natural vistas of grandeur, fitting monuments and symbols of America's strength and position as well as symbols of Him whose will has guided the development of our country since its beginning, whose will has given us the freedom that is a beacon for all neople



It is fitting also that this dedication be held and noticed in this land of such great strategic importance for the part that America must play in a world of threats and stress. It is significant that the world should note the attention we give, the benefits we provide, and the emphasis we place on individual health and welfare. Our multirev forces are not collective machines but are recognized individual iren, women, and families devoted to the cause that freedom shall never be compromised.

This Alaska, which in size is one fifth that of continental United States and more than twice the size of the State of Texas, which extends west almost as far as Wake Island and beyond New Zealand is a beautiful country of mountains, plateaus, and low lands where our country is highest peak stands as a symbolic outpost, a sentinel of eternal vigilance

These statements of Alaskan statistics are primarily for those here not as familiar with the territory as are you local citizens

This country, formerly called Russian America was ceded to the United States in 1867 after treaty of the same year had de termined that the land could be purchased for the sum of \$7 200 000 At that time it was estimated that the nonulation was in the neighborhood of 30 000 the major portion of which was native Thi country was known as the District of Alaska until it was created a territory by an act of Congress in 1912 The general ocean coastline of Alaska is about 4.750 miles However if you include the measurements of the coastline of islands have inlets and rivers to the head of tide waters the coastline measures 26 000 miles a distance greater than the cir cumference of the earth Gold was discovered in the Klondike in 1896 and no one needs to be told of all of the other resources that Alaska has contributed to United States and world economy

This beautiful hospital which we are here to dedicate was originally proposed by the Department of the Army and sub sequently indorsed by the National Military Establishment as a replacement for the temporary structure at Fort Richardson It was originally intended to provide hospitalization for all serv ice personnel in the Anchorage area That it will do The project was approved by President Truman 14 April 1949 The original planning was under Army jurisdiction by agreement with the Air Force The architectural design was accomplished by the San Francisco offices of Skidmore Owens and Merrill By agree ment with the Army the Air Force assumed responsibility for other budgetary and related actions incident to construction fol lowing the original planning The actual construction was authorized by Public Law 155 of the 82d Congress appropria tions were provided by Public Law 254 of the 8°d Congress in November 1951 Construction under supervision of Army engi neers was started the 4th of March 1953 In its finished state we now see one of the finest hospitals supporting the Armed Forces it is certainly the largest service hospital in size and bed capacity in Alaska Its clinical facilities are modern in every respect and offer complete care and treatment for serv icemen and their dependents. These hospital services provide care for approximately 25 000 service personnel and an additional 15 000 military dependents This building is constructed of re inferced concrete with walls of concrete masonry It is built in three separate sections or wings seven or eight stories high de pending upon from which side you view it Special engineering features have been incorporated to allow for earth tremor move ments without endangering the structure. The hospital has ap proximately 1 000 rooms including private semiprivate and 94 bed wards complete clinical facilities cafeteria Post Ex

change, recreation rooms barber shop and an air-raid shelter which cru seat 500 persons if used as a theater. The clinical and servicing facilities of the hospital are sufficient to expand the present 400 bed capacity to 600 beds by the addition of two floors. This building has cost the United States Government more than the original purchase price of Alaska and all of us here sincerely hope that the services it can render to the Armed Forces and to this community will give ample return for the thoughtful planning, work, and money that have gone into construction.



The Sorgeon General, U.S. Navy Rear Admiral Bartholom w.W. Hogan (MC), USV, (left) is not by Major General Dan C. Ogle USAF (MC) Surgeon General L.S. Air Force as the forme arrived at Elmendo f. Air Force Base Amborage Alaska.

For the past few minutes I have spoken of statistics Statistics are interesting and recessary for a complete understanding of areas buildings and activities but they fall far short of printing that rore important picture of intrinsic worth and pur minutes that one important picture of intrinsic worth and pur

country

nose. A country is not the substance of its mountains, rivers and plateaus Similarly no hospital is a hospital by virtue of concrete steel marble tile whiteness or gleaming equipment. The meaning of anything stems from its purpose and the extent to which those responsible for that purpose are dedicated to the cause or work they represent If we are here today to dedicate this hospital then I say we are here today for its first dedication there should be repeated dedications Each new day each new staff must be dedicated to the highest standards of medicine and national as well as individual interests We are here to dedicate ourselves and those who follow us that this hospital shall forever fulfill the purpose for which it was conceived-that the minds and bodies of our servicemen and their families may remain whole and effective that they may be forever alert to maintain our national security and the freedom that is our heritage Dedication is in truth an affirmation of faith It is the means we have to combat the growth of doubts and cynicism and to combat a drift from faith-faith in whatever good thing that is ours to contribute to family community and

This day I feel honored indeed to represent the Air Force and the Department of Defense in the presence of civil officials and citizens of this Territory in the presence of the United States military personnel assigned here in the presence of the Assistant Secretary of Defense for health and medical affairs and in the presence of the Surgeons General of the Army Navy and Public Health Service We hereby dedicate this hospital and this medical service to the full sense of military medicine to the proposition that it shall become a living part of this community that it shall serve with equal devotion each of the three military departments that it shall forever be a focal point of interservice solidarity and co-operation to the purpose that its staff shall be tireless in their efforts to acquire the highest of knowledge and skill necessary to perform their part in preserving the strength and integrity of our Armed Forces And finally I would like to ded icate this entire audience to a reaffirmation of faith in America and to the torch of freedom she holds before the world Such dedication should not be taken lightly and the tasks and prin ciples to which we are here dedicating this building and our selves may be hard

MEDICAL EDUCATION FOR NATIONAL DEFENSE THE MEND PROGRAM

JAMES R SCHOFIELD M D

PHYSICIANS today must be prepared to serve effectively in the Armed Forces or in situations of disaster handled by civilian agencies. For some years evidence has been ac cumulating that a majority of recent graduates of our American medical colleges are inadequately trained and motivated to as sume these traditional responsibilities of the medical profession

The Medical Education for National Defense (MEND) program is designed to acquaint the faculties of our medical schools with the problems of military medicine and of medical care of mass casualties, and with the solutions that are being developed to meet these problems. The 16 colleges of medicine presently affiliated with the MEND program have accepted the obligation of teaching the fundamental concepts related to this area of medicine, in order to better equip young physicians for their responsibilities as medical officers in service, and in civil defense This may be accomplished by formal presentations to medical students and by increasing the appreciation of the problem by the faculty, so that the entire curriculum can be appropriately criented. This article describes the MEND program.

In 1950 the Executive Council of the Association of American Medical Colleges appointed a subcommittee, later known as the MEND Committee to study the existing medical curricula and to make recommendations regarding supplementation with whatever additional material might be needed by the medical graduate for effective service in time of national emergency As a result of this study, the MEND Committee recommended that a series of pilot experiments in curriculum supplementation be held at a few medical schools representative of the total group of 81 throughout the country The schools selected were the medical colleges of Buffalo, California (San Francisco), Cornell, Illinois, and Vanderbilt Universities

ASSUMPTIONS AND METHODS

Representing the American Medical Association and the Association of American Medical Colleges, the MEND Committee,

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Stanley W Olson Baylor Chairman John B Youmans Landerbilt Stockton himball Buffalo Lawrence Hanlon Cornell George V Byfield Illinois and John B Lagen California (San Francisco) proceeded on the assurption that whatever was done would have to be soundly conceived from an educational point of view and would have to be consistent with the educational philosophy of each school Therefore it was agreed that

- 1 Each school should be free to work out its own
- 2 The individual program should be developed through the faculties of the respective institutions
- 3 The programs should be designed to stimulate stu dents and to create appropriate attitudes as well as to teach appropriate material
 - 4 Emphasis would be placed on professional rather than administrative and organizational topics and
- than administrative and organizational topics and
 5 The program would be evaluated as critically as
 possible

The five pilot schools began their experiment in the fall of 19 2 and by January 1954 the Chairman of the Committee was able to give a detailed report of the educational approach to the problem as used at each of the pilot schools From this article one can see that the principle of individual faculty interpretation has been maintained

Two different approaches were u ed (1) Cornell and Vanderbilt deliberately avoided separate courses for MEND on the premie that the new material should be completely integrated into the regular curriculum (?) At the University of California a separate course in Civil Defense and Military Medicine was developed (3) At Illinois and Buffalo a combination of these two policies was adopted Waterial was presented to all four undergraduate levels at Cornell and Buffalo while at Vanderbilt Illinois and California special attention was first given to the freshman class with progression with that class year by year until all four levels could be affected by the changes in the curriculum. The presentations were mandatory except for some optional showings of films in two of the schools.

A number of guest spealers drawn from the Federal services visited all of the campuses in order to participate in the teaching program. All of these visits were rade in response to invitation and sponsorship by the local faculty. The VEND Committee be here this to be one of the most desirable features of the program.

From the beginning there was good acceptance of the program by students faculty and administrative officers of the colleges All five nilot schools have desired a continuation of their affili ation with MEND and these faculty members have been very active in orienting newcomers to the program

SUPPORT BY FEDERAL SERVICES

The Army Navy, Air Force, Office of the Assistant Secretary of Defense (Health and Medical), the U.S. Public Health Service, and Federal Civil Defense Administration provide the schools with necessary teaching materials, sponsor seminars in military medicine, and furnish visiting speakers at the invitation of the participating colleges

Financial support for the MEND program is provided by the Public Health Service and the Department of Defense A grant is negotiated with each of the participating colleges for an average amount of \$11,000 to include a part-time salary of \$5,000 for a local coordinator, the bilance to cover the expense of faculty travel and cost of teaching materials rented or pur chased. The MEND program at its fullest possible expinsion to all American medical colleges shall cost no more than an estimated 40 to 50 percent of the annual operational expense of the medical ROTC program formerly in operation As MEND has doveloped, representatives of the Federal services upon numerous occasions have given written and public support to the program, and the several Surgeons General have more than adequately fulfilled their promises to provide teaching materials and support to the participating schools 1-1

EXPANSION

Beginning with the academic session 1955 1956, the MEND program was extended to the following colleges Tufts, Pennsyl vania, Georgetown, Medical College of Virginia, Emory, Ohio State, Baylor, Wisconsin, Colorado, and Washington (Seattle) Michigan also participates in the program without financial support at this time Present plans are to extend affiliation to 10 additional schools as of 1 January 1956 and continue to add 10 each year until all who desire affiliation can be given that opportunity.

MEND ACTIVITIES

Symposia

In order to acquaint faculty members with specific problems in military medicine, the participating Federal services have sponsored a number of teaching symposia attended by both medical faculty members and military physicians Sessions have been held on the following subjects Blood and Blood Substitutes," Psychiatry in Mass Casualty Care, "Biological Warfare, Medical Care of Wass Casualties," Shock," "Stress," and Lepto-Spiral Diseases"

Faculty Travel

As new groups of faculty members affiliate with the program the MEND Committee and the Federal services sponsor a Coordinators Conference designed to give the MEND Coordinators of each school a briefing on the nature of the problems encountered by the military medical officer and what is being done to meet these problems. In March 1955 some 30 deans and coordinators visited New London Submarine School National Naval Medical Center National Institutes of Health Armed Forces Institute of Pathology Army Medical Service Graduate School Medical Field Service School in Brooke Medical Center and Air Force School of Aviation Medicine at Randolph Field. It is expected that the junerary of the coordinators tour will be varied each year.

Individual faculty members of the MEND schools are encour aged to visit Federal installations where research and teaching are being done in order to awaken new possibilities for our noular change or supplementation. It is believed that travel by faculty members to the Federal installations is by far the most significant activity of the MEND program and such travel is supported by the largest item in the local budgets of the MEND schools.

Teaching Materials

All of the training films and professional medical films used by Army Navy Air Force Federal Civil Defense Administration and U S Public Health Service are available to the MEND schools and are widely used Some films have been duplicated and comes incorporated in individual school libraries

A considerable series of technical manuals handbooks and texts prepared by the Federal services are on special MEND shelves" in the school libraries and are used in departmental teaching

Pathology of Agents of Warfare

Dr John L Shapiro Department of Pathology Vanderbilt and I recently began working with pathologists at the Armed Forces Institute of Pathology and with redical officers at a number of other Federal installations in the development of an extensive collection of teaching raterials on the subjects of cold injury radiation injury beta ray (fall out radiation) and systemic radiation effects trauma from rissiles of all types burn injury and atmospheric and underwater blast injuries. The materials will take the form of photomicrographs and color lantern slides and will be reproduced and made available to the schools. We estimate that some 250 items will be included in the collection.

Visiting Speakers

An increasing number of medical officers and scientists are being invited to visit the medical colleges in the capacity of quest lecturers. The response by the students to this phase of the MEND effect has been excellent. It provides the young students with a direct opportunity to meet career service officers in person and to learn firsthand of the achievements of military medicine. A "speakers bureau" for MEND has been prepared and is growing rapidly due to the interest of medical officers and the strong support of authorities of the Federal medical services.

FIELD TRAINING IN MASS CASUALTY CARE

In an effort to introduce medical students and house officers to the problems of mass casualty care, the MEND Coordinator at Baylor, Dr John Howard (now at Emory University), and Dean S W Olson last April organized "Operation Mercy," a civilian version of a mobile Army surgical hospital with a sorting station To simulate reality, this unit was called out without warning, was completely equipped by four hospitals in Houston, and was transported 90 miles to the adjoining city of Beaumont in response to a practice distress call

Two hundred and fifty major surgical "casualties" had been tagged and scattered around a disaster area. The sorting station was established in a warehouse, the hospital in an elementary school Distant evacuation to Houston was by rail transport Litter bearers brought the casualties to the sorting area where trage was effected and necessary resuscitation done Appropriate casualties were moved to the improvised hospital. There they were prepared and draped, and indicated surgical procedures were timed. The first "patient was admitted to the improvised hospital 5 hours and 15 minutes after the initial alert had been received in Houston 90 miles away.

Records of all medical treatment and disposition were kept and later studied by the students under direction of the Department of Surgery Visiting medical officers who served as judges favorably evaluated this type of civilian training maneuver and indicated that much of the difficulty and confusion existing in a disaster α combat area had been successfully reproduced Several other MEND schools are investigating this plan as a means of orienting students to mass casualty care

SYMPOSIUM ON BASIC SCIENCES IN AVIATION MEDICINE

The first scientific session sponsored by MEND during 1955 1956 will be held at the School of Aviation Medicine Randolph Field, 14 15 November 1955 The Air Force and Navy are presenting a program that should be of interest to professors of physiology biophysics biochemistry pharmacology and path place Eight sessions will include consideration of Biological effects of decreased atmospheric pressure biological effects of increased atmospheric pressure biochemistry in aviation medicine radiology in aviation redicine investigation of biolog ical causes of aircraft accidents decompression sickness ove gen poisoning and chronic adaptation to decreased oxygen con sumption In addition to the formal discussions there are to be visits to laboratories demonstrations of research results and informal discussion sessions. It is anticipated that this is the first of a series of annual symposia on Aviation Medicine to be held at different air bases in the country

Other symposia during March and April 1956 will concern Cold Injury and Infectious Diseases

By special invitation MEND faculty members are to attend the 60d session of the Association of Military Surgeons which will be devoted to problems of mass casualty care

CONCLUSIONS

It is obvious from a review of MEND activities that the experi ment has been successful and that the method is achieving wide adoption There is no fixed plan or mandatory curriculum imposed on a school affiliated with MEND each faculty is encouraged to go its own way using the experiences of others as it chooses and seeking fresh approaches to the problem of curricular mod ification There can be no question of Federal control over a faculty of redicine rather there is an honest and sensible en couragement for civilian and military medical authorities to meet and discuss their individual and common problems and to share ideas for the mutual benefit of all concerned

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Clinicopathologic Conference

U S Naval Hospital Philadelphia Pa

DYSPNEA AND PTOSIS

Summory of Clinical History A 48 year old man s illness began five weeks prior to admission with sour stomach" and anoroxia Pain in and about the left eye was present for three weeks prior to admission Ptosis of the left upper eyelid with difficulty in moving the left eye developed, disappeared their reappeared shortly before admission A physician told him he had heart trouble and gave him three tablets of digitalis daily, plus "shots" to make him lose water "Previously he had been receiving one tablet of digitalis daily for eight years for pulmonary emphysema productive of exertional dyspnea and orthopnea. His shortness of breath and fatigability increased during this illness. There was no weight loss.

His father and one sister died of tuberculosis. His mother died of old age

Physical Examination On admission he seemed mentally dull, pale and only partially oriented His temperature was 98° F. pulse, 44 respiration, 16 and blood pressure 126/65 mm Hg There was ptosis of the left upper eyelid. The right pupil reacted well to light, on accommodation and on consensual stimulation The left pupil was slightly larger than the right and reacted poor ly to light, little if any on accommodation, and poorly to consen sual stimulation Right external ocular movements were full the left were limited to minimal internal rotation Diplopia was present there was no exophthalmos and by confrontation visual fields were full There was moderate artenovenous compression of reunal vessels but no papilledema The facial muscle movements were normal No objective changes in facial sensory reception were demonstrated. The tongue was red and smooth at the tip Percussion over both lungs was hyperresonant and breath sounds were distant. The cardiac apical impulse was not visible The heart sounds were distant and no murmurs were audible. The car

Cap C urt y G Cl gg (MC) USN Commanding Offic t F m the P th 1 gy S rv c C md J h D L gt (MC) USN Ch f.

diac rate was 50 beats per minute with an occasional premature contraction The abdomen was soft and not tender to palpation. The liver and spleen were not palpably enlarged and there were no masses There was no pedal or pretibual edema Postural hypotension was noted one determination being 82/64 mm. Hg sitting. and another 110/72 mm Hg supine.

Lubergtory Studies The red blood cell count was 5 million per cu mm hemoglobin 13 9 grams per 100 ml and white blood cell count. 9 600 per cu mm with 45 percent neutrophils 51 percent lymphocytes 2 percent eosmophils and 2 percent basophils Urinalyses showed an occasional white blood cell and 0 to 2 red blood cells per high power field and a specific gravity of 1 003 Roentgenograms of the skull showed erosion of the postenor clinoid processes. A nodular noncalcific density about 1 by 2 cm was seen on the roentgenogram of the chest in the left upper lung field at the level of the first interspace anteriorly. The heart and sorts appeared nomal

An electrocardiogram revealed a sinus bradycardia with a rate of 48 per minute with an occasional premature ventricular con traction. The PR interval was 0.20 CRS 0.10 and 0.T. 0.43 second P waves were normal The QRS complex showed a small R deep S in leads I aVL V - there was a small O wave in II III aVF and V S waves were present through V segment was slightly depressed in V, and moderately depressed in V and V The T waves were low but upright in lead I inverted in leads II III aVF and V -, diphasic in V and aVL isoelectric in lead V and upright in aVR A prominent Il wave was noted. The axis was +90

borderline low voltage and The tracing was interpreted as nonspecific ST segment deviation and T wave changes The possibilities of electrolyte imbalance and/or metabolic disease (hypothyroidism) present themselves Emphysema could also account for some of the changes noted

Blood chemistry was as follows Serum chloride 102 and potassium 4.74 mEq per liter glucose 11.7 and blood urea nitro gen 11 mg per 100 ml total protein 6.3 (albumin 4.3 globulin 20) grams per 100 ml Findings of the Kahn test were negative Lumbar puncture on the fifth hospital day yielded slightly yellow fluid under 80 to 90 mm of pressure No blood cells were reported and the protein was 70 mg per 100 ml

Course in Hospitel During his hospitalization the patient had occasional episodes of headache with sudden onset, followed by blackout with involuntary unnation cold moist skin and "muscle spasms On the twelfth hospital day findings of an arteriogram of the left caroud were negative. The day following he developed paresis of the right lateral rectus muscle and limitation of upward gaze of the right eye, with dilatation of the right pupil and failure to respond to light. The patient became more apathetic but remained fully conscious. He was found dead in bed at 0435 hours on the fourteenth bospital day.

DISCUSSION

Doctor Koplan To summarize our findings in this stimulating case we have a 48-year-old man whose history encompassed that of tubercu losis in his family his own past history being that of exertional dyspnea orthopnea and emphysema of apparently eight years duration We note that he had been on digitalis all of this time for pulmonary emphy sema productive of exertional dyspnea and orthopnea. We also have been told that for some indeterminate length of time apparently a matter of several weeks he was on three digitalis pills a day and I assume that that was up until the time of admission. This is a rather prodigious amount of digitalis His last illness was that of five weeks of anorexia and sour stomach and I take that to mean the man was probably com plaining of nausea. He had progressive shortness of breath noticeable prosis of the left eye and difficulty in ocular movements of the left eye He had a subjective complaint of diplopia and also pain in the area of the left orbit. The significant findings were mainly confined to cere bral signs in a dull poorly oriented patient with a temperature of 98° F and a pulse rate of 44 His left pupil was larger than his right All of the pupillary reflexes were diminished on that side We are not told whether he had comeal anesthesia or not His external ocular muscles were paralyzed completely on the left side except for minimal internal rotation. We are also told that by confrontation his visual fields were full but perimetry was not done so central scotomata might still have existed There was no papilledema

The blood cell count was normal I am surprised that with such a long history of emphysema and presumably of cardiac difficulties there was no polycythemia. One unnalysis is given which is of no particular help except for the provocative specific gravity of 1003. We are not told whether this man had polyuria or polydipsia suggestive of diabetes insipidus in a cerebral lesion this certainly would have to be considered an important clinical sign. Lumbar puncture revealed "slightly yellow fluid and an elevated protein no increase in cells no increase in pressure. The other thing we are told is that this man is course was downhill. He was complaining of progressively severe head aches. As a terminal event the right eye was involved as well as the left. He had what were apparently convulsive seizures.

I try to put all of these symptoms together. The first thing that I think of is an intracranial lesion, the nature of which is not readily apparent. You have to think of primary lesions such as pituitary lesions, cavern-

Lt. Allan A. Kaplan (MC) USNR, W nd Off er M dical Service

shift to the left. We notice that the S-T segments are depressed in leads V₂ V₃ V₄ V₅ and V₆ with the initial portion of the T wave being in verted and the terminal portion being upright. This terminal upright may possibly be a U wave I think it is fair to say that with this marked right axis the depression of the S-T segments and the marked clock wise totation across the precordium we certainly are dealing with a right ventricular strain pattern From this single tracing it would be im possible to say whether this was an acute or chronic cor pulmonale but when we examine the clinical history we see that this man had emphy sema for many years I think we are on safe grounds by concluding that we are dealing with a chronic cor pulmonale. The possibility of digitalis intoxication is brought up by the large amounts of digitalis that we know this man was getting I would not be inclined to think that this tracine shows signs of digitalis toxicity. I think that the S-T segment depressions and the terminal upright T wave certainly show the effect of digitalis but I believe that the slow rate was from other sources probably in this case cerebral The occurrence of the premature ven tricular extrasystoles are not frequent enough to warrant the diagnosis of digitalis toxicity Another factor against it would be the normal P R interval I must admit from the history I am surprised that more digitalis effect is not noticed

Now let us see whether we can put this story together and come up with an answer. From what we have seen we are rather certain that this man had emphysema. We are not sure of the cause of this. There was no mention of asthma in his past. There was no mention of anything hereditary I am supprised that there was no polycythemia but this is not always found in this type of problem. The cardiac signs that we have seen the pulmonary artery dilatation on x ray examination the signs of right ventricular hypertrophy on the ELG would certainly go along with an obstructive emphysema I don t believe that the emphysema played a major part in this man's demise however. A question of digitalis intoxi cation has come up we know that this man had been on large doses we know that certain central manifestations were apparent and yet we find an absence of gastrointestinal symptoms-no nausea vomiting or diar thea We are not told of any disturbance of color perception. The electro cardiogram does not show any definite hyperirritability of the ventricular myocardium and there is no great degree of block at the AV node so I think we are forced to conclude that the slow rate was on a basis other than digitalis intoxication

This leaves us with the brain lesion. We have general symptoms such as lethargy anorexia and personality changes the man being described as having been dull and unresponsive. We have the slow pulse the elevated protein in the spinal fluid and what appears to be some xanthochromia. The specific localizing signs that we have are mainly left eye signs with involvement of the left third, fourth and with cranial nerves and the x-ray film has shown us that the sella ture ion was eroded. We usually think of this as being a localizing sign for the

pha vne m

has been pointed or that any ocreased intracranial pressure may atrophy of the cl nord processes. I think we ar forced t the concl that our lesion was in the area of the sell turcica with involvement the cavernou sinus mainly the third fourth and sixth cranial ne The lack of papilledema and the lack of increased cerebral spinal pressure on spinal tap doe not militate against a lesion in this We know that the usual e sons for papilledems are blockage o internal cereb al spinal fluid mechanism with involvement of the la ventricles the aqueduct of Sylvin or the foraming of Lusebki Magendie n the posterio fossa Around the pituitary the vents. system is usually not involved and therefore no great incre ses in sure need be expected Papilledema 1 most pr nor to occur w lesion in this area

Now let a examine our possibilities Could this have been a ca inus inf ction? This has been d serbed as involving the cranial nerves ment oned but the ab enc of fes r the absence of in the cer bral pinal fluid the absence of signs of inflammation venous stasts per orb tally all rule against this possibility and think wite saf in dis aiding this Could this be a pitu tary lesio so we w ld have to dec de whether it was abov or bel w th ph agma sellae Th us I lesions below the d phr gma sellae ar ch omophobe tumo s which destr y the activ elements in the pitu b t we are not apressed by a y severe panhypopituit ii m i pat ent W at told the patient was listless anorexic. We have ur nary spec f c gravities of 1003 so w re not use whether there ad betes insp dusp esent. The posibilitis of an acid philic t or a basophil tumor are likewis considered unlikely po iblitie cause of the lack of specific endocr nonathies. The les on abovdaphr gma ell that we would have to co sider would be a c

While th se r man possible there are several things that milagainst them The ca pharyng oma usually occurs in you get per usu lly betwe the ge of 10 nd 20 The ran opharyngs ma s fr quently cale fied which this I son appar ntly w s n t and not us lly xtend far nough later lly to involve the ocul r cr nerves The t t sign th t we se th se tumors are u ually pre n the opt; chi sm prod cing centr I scotomata Again thes tur are to us fo us ng di betes insip d s by disrupti g the hypoth m c fibe s to the poster o picuita y This is an unknown factor in

We ar then for ed to look f r some oth r f cus for our le 10n and logical pl c with the pathology we have before u sith lung I was famil I h to y of tube culosis so we could assume that we deal ng with a t be culoma which f q ently invol es the base of b ain Aga n with the lack of fever 1 ck of cells n the cerebral si fluid d the rapid downhill course this is a rather unlikely possible We must consider another type of inflammatory lesion that of a brain abscess secondary to pulmonary bronchiectasis. It is known that in some few cases of long-standing bronchiectasis brain abscesses occur but again we are missing the expected signs of fever and of leukocytosis in the cerebral spinal fluid. As I first read this protocol and noticed the mention of ptosis and of a lesion in the left upper lung field I thought of a Homer syndrome but on closer inspection this does not hold. We have no myosis no mention of decrease in homolateral facial sweating and no enophthalmos all of which are the usual findings in Homer's syndrome. Also Homer's syndrome is not productive of ocular palsies which were very definite in this patient.

It is well known that in about one third of all patients with carcinoma of the lung we have brain metastasis Though it is not a common occur tence these metastases may go directly to the pituitary gland and cause the condition that we see here of erosion of the sella turcica and the slow destruction of the functioning pituitary tissue Lastly we must look for even more distant sites. If this lesion in the lung can be con sidered a metastasis we have to think of sites that will metastasize to both lung and brain The lesions that come to mind are hyperneph romas adrenal gland carcinomas or thyroid carcinomas. We have nothing in our protocol to incriminate these structures so they are merely men tioned for completeness. To sum up once more then we are dealing with a rather rapid downhill course of a man with emphysema pulmonary hypertension and a lesion in the upper lobe of the left lung. We have cerebral involvement which localized in the area of the pituitary de stroving the sella turcica and involving the cavernous sinus and its adjacent structures the ocular cranial nerves. We are told that as a terminal event the right ocular nerves also became involved and we might therefore conclude that this lesion expanded in both directions in volving both cavernous sinuses and their structures We are also told that the patient had convulsions as a terminal affair and if we are hy pothesizing metastasis to the brain we are within our rights to postulate another metastasis to the motor cortex With the whole problem put to gether then I am left with just one diagnosis so I ll stick my neck out on this being a bronchogenic carcinoma with multiple metastases to the brain the primary one involving the pituitary gland sella turcica the left cavernous sinus the left third fourth and sixth cranial nerves and perhaps the right cavernous sinus and the same nerves on that side

Doet r C pro In discussing this patient there are several basic factors to be pointed out The most important. I believe is that all though he was chronically ill for years his actual terminal illness was of brief duration—about seven weeks. Another factor is that his death was not due to a generalized wasting illness but rather to one of disturbed and interrupted vital functions.

Lt Comd Vinly J C P n., J (MC) USN H ad Ch st Bran h Med c J Serv

First we e th symptoms of fatigue and shortness of breath. We can account for this to some ate t t least on the basis of pulmonary emphy ema Th emphy ema was not too severe t that there was no marked chest fixation or clinic I evidence of tight he rt strain. The les on f u d in the ch st x ray in the left upper lobe w ingle It s not difficult to correlate the findings in the che t and brain for in both e plast c nd infectious disea es these organ are frequently both involved As to t mors Ferguson cited by Norris and Land's ren rt d th t in 29 cases of m tastatic b ain tumors nine were of nul monary ogn Do quet fond 37 pe cent of 105 c ses and Fred 47 percent of 19 case

The speed to the bran of pulmo ary neoplasms a dinfections can be either by direct v scular p netrati n or via the posterior bronchial veins or the v rt bral plexus Bronchogenic tumo s and many v ned fections tend t metastas ze to th brain In cont ast t is extremely rar for p mary brain les on to metast size to the lunes

Our n at effort hould be to loc lize the obvious br lesson in this patient It ev d ntly was n t easy b caus cereb al anging ams were attempt d W ote first the ab ence of choked di k The ocular ens tell us that the lesso ffected the reht oculomotor nerve. Th earliest sig were un lateral. This nerve rise from the nucleus in the gray sub ta ce in the floor of the cer b I aqued ct and xtends in fro t of the aqueduct for sh tt dist nce into the fl or of the third ventricl Fibers th go forw rd through the teamentum red nucleus nd medial s b tant a nigr emerg g from the ocul moto ulcus on the medial side f the cereb al pedu cle It lo ha fibers to the l ary gangl on Si ce this n rve controls conve gence ccomm dation nd sph neter fibers of the iris b s des the usu I mu cles we know t s involved. The be ce of exophthalmos puts the le on behind the orb t I am against a f ntal le ion n that ight w s nt ct the psyche not too berr nt and there w s no disturbance of smell o speech The ntact isual f ld are against an occipital defict. The b sal ganglia eem int of because of the un I teral symptoms. Not to waste time it eems the les on here is typical of those in the area of the m dbrain particula ly of the ou dr geminal place mo e o of the colliculi Plate les o s are usually bil ter l A l si n on the left in the colliculi would tend to comp s the ocul m to a dabducent nerves along the aqued ct of Sylvu If it ext ndea into the red nucl s there would b ataxia nd tremo Th s t seem the 1 s n would be more loc lized; the left coll cul and ed n cleus. It could almost be classified as a W ber's syndrom (the t of paralysis of the thi d nerve and some evi de ce of hem pleg a n the oppo t sid) As reg ds this ca e a mid br in loc ti wo ld also explain the ero on of the poste ior cl n d nr ce ses Pres re o the aqueduct of Sylvius wuld c e the par x smal headaches sy cope and to c spasms—the ynd one nvolving the third ve tr 1 Further pre s e co ld cau e th bradycardia Vagal bradycard s mprobabl this c e

As usual we always try to explain all the signs and symptoms on the basis of one causative agent. The hardest finding to correlate is that of the abnormal EkG. I believe we could discuss this for some time. The S-T segment and T wave abnormalities are nonspecific. In epicarditis the changes are often nonspecific. Since we are looking for a single diagnosis let us consider pericarditis. Frequently pericarditis particularly in ruberculosis and allied granulomatous infections is asymptomatic. In any case of pulmonary infultration of the demonstrated configuration and of a brain lesion bronchogenic carcinoma would be the prime suspect. It however does not involve the pericardium of the than by direct extension locally or from a metastatic lymph node. This is not apparent here. Bronchogenic carcinoma also is a relatively slow growing lesion, it would seem unlikely that a brain metastasis of this sort would cause death in such a short time.

Thus we come to tuberculosis Pulmonary and cerebral involvemen in this disease is of course not uncommon Brain involvement how ever is usually secondary to miliary disease and although miliary disease can be considered. I cannot recall a case with death ensuing in such a short time without evidence of wasting fever and terminal spinal meningitis. A single tubercle could be in the brain but I wonder if in its granulomatous state it could be guilty of such localized and fatal effects. Regardless though possible even with adrenal involvement. I tend to hedge on either carcinoma or tuberculosis as a single cause. I might add that perhaps I m swayed by the fact that either an swer would seem somewhat too easy for a case in this conference.

In the protocol there was one other statement that hothered me It was The tongue was red and smooth at the tip I wonder if it was sore too This certainly is a benign statement but it brings to mind another entity Fungus infections seem to prefer the edges and tip of the tongue One could certainly not exclude one of these as a cause of the pulmonary lesion Actinomycosis is one of the most common As a cause of pericarditis and of a lesion in the brain it is very rare. In the brain however it amounts to a fulminating disease and is associated with extreme fatigue. The use of the term "yellow rather than xanthochromic in the description of the spinal fluid is also supgestive Actinomycosis has been said to cause a yellow spinal fluid Actinomycosis could thus cause all the signs and symptoms and find ings in this case Against it though is the fact that it is normally manifested in rather grossly evident disease especially about the neck affecting the lymph nodes and often the skin It may originate in the sinuses Was there any evidence of demail granulomatous disease in this case?

Doct Rul No

Docto C p Regardless the diagnosis I consider the most likely as a single entity is actiromycosis involving the lung brain and peri

cardium As Doctor kaplan has stated bronchoge ic carcinom tistically much more likely than actinomycosis involve the lung bain nd pericard um Tub reulo s I consid r unlik ly

I would lik to say a mething about the after ogram here because of the f ct that one of th discuss to the ght that it h d b en don because of clinical diff culty n I calizing the I sion This w s not so m ch the re son for doing the arter on m as was the clinical dig osis of an un m This history a d the clinical f dines I think were fairly in keeping with an intraclinoid type of aneurysm of the netem I c ot d imping ng on the cav mo s sinu and g v g th so called cave ou s s syndrome which cons is of part all or complete
pally of the third, fourth and sixth ne v s and also the p in charac terist c of the first d v s on tripem n l nerve t gether with hyp res these in the forehead which we elicited when we first exam ed the p tient Clin cally we h d to local ze the less n at the b se and aneu ry m was the first chice a t type of le ion Othe p ssiblit s con sidered were sim lar to tho e liready mentioned but malignancy at the base w for mo t of these becau e of the rapid course d it bec me th most likely when th aneurysm failed to mate alize Thus the rt r ogr m wa d e to inv st gat the po bility of an urysm rather than to lo al ze th less n which w believed was in or ne the ca emou s nu

Do to M M Ili Well Ill mak a comm nt on th Here a man who had ben afflicted with emphysema for a umber f year bit who had a rather r p d te m 1 lln ss A foc I lesion in the midbr in w uld not account for his sen lel dig wh h was ppar ton admis n and the progre o of the confu o ca only b consider d as due to toxic or oth d st uct ve change the brain Th EkG-well I m going to t ch my neck out On the b s of seeing cases sim la to this I w ld lk t m ke a first ch c of t b reul is or a sim lar chron c g 1 m tous lesion involving nd e ircling th m dbr in nd f nally terminating with Pro uds syndom e paralys of upw d gaze fr m a le on n the oll cul region Bes de th's the e co ld be a d ffu p ocess invol ng the cortex of the b For som strange a on we do on the s thercul s men ngitis missed b cause there may b no high cell court in chal rigidity until limo t the t rmu al tages

D to K pt Th only th g which wasn't mentioned in the protocol but which w s me tioned wh n Dr Pal goni read the x rays was that perh p there wa some nvolvement of the phenoidal inuse nthis er ve po s is I remembe think g at that tim that perhaps we are de line with an denocarcinoma ari ing from the sinus lining working t wy up th ugh th bai deroding into these are s thus involving the whil thing That a log ht Im ot changing my origi al diag os s but I think it should be mentioned

LN II Ar (MC) UN N ur urgeo h no urgery S vi Capt. 1 h F M Mull (MC) USA Ch I A rop y h tr S

Clinical diagnosis

Aneurysm, internal carotid artery

Dr Kaplan's diagnosis

Broncl ogenic carcinoma, with metastases to brain and pituitary

PATHOLOGIC FINDINGS

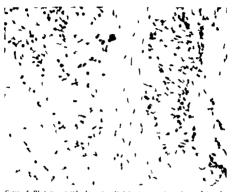
D ctor Rul The diagnosis in this case is bronchogenic epidermoid carcinoma of the lung with metastases in the sella turcica eroding the posterior clinoid processes and extension to the left third fourth and sixth cranial nerves the area of the tuber cinereum and the right cerebral hemisphere. This finding in this patient points up the fact that the size of the primary pulmonary lesion which in this case was about 2 cm in maximum diameter has no necessarily constant relationship to its curability by resection. The primary lesion was of relatively undifferentiated epidermoid nature (fig. 4). The mass in the sella turcica filled the sella and destroyed portions of the posterior clinoid processes. The sphenoidal sinus was opened and found to be normal.



Fig 4. Ph tomicrograph of l g section shouing p imary carcinoma (× 180)

As the third fourth and sixth nerves proceed toward their exit to the orbit they are closely adjacent to the sella tutcica. This lesion had extended laterally to involve these nerves on the left. No anatomic reason for the terminal palsy of the right sixth nerve was apparent at 1500

autopsy. There was an intim t relationship of th tumor to the residual anter or 1 be of the p tuitary (fg. 5) which although encroached upon by tumor retained s judged by the morphologic appearance its via bility Inva ion between the bindles of a left cranial nerv probably th oculomot f was bit logically demonstrable (fig. 6)



f gur 5 Ph t m gaph hou g m tatt ca ma t liu b j t a terorl b fpt tary (left) (180)

The e ro chm nt of the lesson upon the pituitary gland bring p the q e t on of how much hypop to tarism is pt sent Clinically per h ps th extreme fatig bility of which this patient c mpla ed may be relat d

From the mi o ope pp arance on would say that a degre of secondary hyp fu tion of thyroid adrenal ind testes exist d Th thyroid acin with renormal size to small the lining epitheli m was very fit in dithe collod howed no selloping and rended toward bisoph! All this though not no essily indicative are usually found in hypothyroidism. It is of interest that in the bisof the EKG hypothroidism was suggested. The dren litex was thin and made upith fly of zoglomerul si with thin fiscell and ticular zos inclused umbers of cost philis were present in the liver spleen in door mar ow phaps due to declased drenal crucial friction. The tetes howed absence of spemariog is dinclusted to the time to discondary tooth.

Within the brain there were two hemorrhagic lesions within the cere brum which appeared microscopically as hemorrhagic infarcts. The larger of the two was subjacent to the right cortical motor projection area and contained tumor tissue in the center (fig. 7). It would have been of interest to know if the epileptiform seizures were Jacksonian.

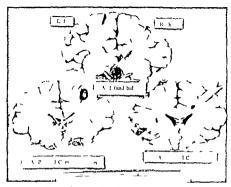


F gu e 6 Photom crog aph shouing mva on of tumor about fb s of the cranial nerve (x 180)

A third lesion 1 by 1 by 1 5 cm was located in the anterior hypothalamus at the tuber cinereum This lesion apparently compressed the rostral portion of the third ventricle that is the optic and infundibular recesses. It had not given rise to obstruction of the ventricular system sufficient to cause dilatation of the lateral ventricles. It was hemor thagic and composed of epidetmoid carcinoma similar it that observed in the lung. The optic tracts were adjacent to tumor but no involvement of these by neoplasm was seen.

In this area are located nuclei which control water balance and the parasympathetic nervous system. It is of interest that the only two recorded urinary specific gravities were 1003. Volume of urine output is unknown but no observation of polydipsia or polyuria was noted on the patient's chart. The stimulation of it'e parasympathetics may have been responsible for the bradycardia and postural hypotension.

Other symptoms usually associated with hypothalamic involvement that is sleep disorders and loss of body temperature control were not present



 Γ g 7 G d l l on f the thr m tastas with the bra

In respect to the 1 ng-st nd g history of emphys ma bull e were prent n both lungs and it i likely th to me degree of pulmonary hypertens nex ted a attested to by ubintimal hyal niz tion of sm Il pulmonary retrole and ground histologic evidence of right venticular hypertophy

A tomic di gnosis

Bronchogenic carcinoma with metastases to pituitary and hypothalamus

D to P df ld Th has been a m st interesting nd instructive case for everyo e and the discuss nt have presented the mater. I very well I the kon of the most import not things for u to the away with us that my of the central nerve us system lesions are metastate in the brod sene that they are ubsequent to or caused by affections infilmmatory or neoplastic of other parts of the body. Even 1 sons resulting for that male from the material transport of the parts of the party focus infilmmatory or ne plastic mest frequently is in the respiratory system. In the case fineoplasm kem han and S yie stated. Figures for various soulces show in neidence of mt static tumors ranging for less than three to limist 40 percent of all tumors find the certain nearly the night of the process of the static tumors ranging for nearly, then gell of hospitals.

LE S.Rdf ld (MC) USN A to P th 1 g P th 1 gy S to

of 100 metastatic brain rumors from their laboratory in which he found that " more than one third originated in the lungs slightly less than one fourth arose in various segments of the gastrointestinal tract while about one tenth originated in the breasts and a similar number took origin in the kidneys. In connection with our case recent reports by different workers show that an appreciable number of patients as much as 10 percent with bronchogenic carcinoma present themselves primarily with signs and symptoms of brain tumor.

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S to X 1 s 1 s 35 d 37 p 12

3 K f r E J M tatatt bra tum. The U 1 r ty f Min s t Gr d at Shool 1947 Q t d 1 r fe σ 1

CORRECT USAGE PREFERRED

I have frequently read and heard the phrase more preferred. Is this a misuse of words? The term preference is derived from two Latin words prae and Jerro and means liter ally to bear or place before (something else). Thus a student who goes to the movies before studying his lesson prefers on that occasion at least the show to his studies. There are no degrees of preference. A is before B or B is before A not more or less before. If several objects are presented for choice the whole group can be arranged in a preferential sequence but still there are no degrees of preference.

Confusion comes from the fact that something does vary in degree One object or response is more desirable more pleas ant more acceptable better liked than another There are degrees of desire pleasantness acceptability appetite, liking etc but not degrees of preference

-P T YOUNG

in American Journal of Psychology

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CASE REPORTS

Alopecia Universalis in Cirrhosis

WILLARD R WARREN M 100 MC USA

A LTHOUGH some loss of hair is not uncommon in Laennee s cirrhosis alopecia universalis is generally assumed to be rare. In spite of a report by Lloyd and Williams that they found a 75 to 100 percent loss of body hair in 12 of 46 rade patients with sovere cirrhosis standard textbooks of medicine and diseases of the liver do not mention alopecia universalis among the complications of cirrhosis Similarly dormatology texts fail to incriminate cirrhosis as a possible cause Recently an additional patient was observed who developed universal alopecia coincident with and possibly as a complication of Leannee's cirrhosis.

CASE REPORT

The patient a 46-year old white man was dmitted to the hospit 1 on 3 Octob r 1953 with the chef complaints of vom ting and diarchea of 36 hours duration. He had felt well until about 3 weeks before admission when there was an onset of anotexi. lassitude malaise insom it and dark ur e. On 2 October he developed n usea tt nded by frequent vomiting a d diarthea character zed by about 10 loose blick stools daily. The next day he become jundiced and sought medical attention.

Past history revealed that the p t ent had had scatler fever in 1924 dengue in 1942 m laria in 1943 1946 and pneumon a in 1949 H ad mitted to drinking a good deal—at lea t four highballs d ly— and frie ds stated th the subsisted largely on alcohol During the 10 months preceding his present admission to the hospital all of the hair of h s he d trunk and limbs had gr dually turned gray and then f llen out.

Physical examination revealed a well developed will noutished man who appea ed 20 years older than his stated age. The mot strik ing finding wa the total absence of all hair. Skin ind sclerae were moderately cteric. Miny tella giectases were noted on the head mild palm r erythema was present and there was a large spider ingioma on the right wrist. The sides of the tongue were smooth and red. The liver was palpable 6 cm below the right costal margin and wa tender Curaneous veins were prominent of the upper abdomen and the lower thorax. The testes were normal in size but distinctly soft. There was

FmUS Army Hptal APO 180 Nw York NY MjW i w gad 33d Fld Hospital APO 11 Nw York NY

bilateral 2 plus pitting edema of the ankles Deep reflexes were all hyperactive and there was marked intention tremor of the hands

Complete blood cell counts urinalysis serologic tests for syphilis examination of stool specimens toentgenogram of the chest and an electrocardiogram revealed normal findings. The cephalin cholesterol flocculation was 4 plus thymol turbidity. 17.3 units serum bilirubin 6.1 mg per 100 ml serum albumin 1.73, and serum globulin 4.78 grams per 100 ml Prothrombin time was 32 percent of normal

On admission a clinical diagnosis of curhosis of the liver was made and the patient was placed on the usual therapeutic regimen for that disease. In spite of intensive treatment however his condition de teriorated rapidly and he developed progressive hepatic insufficiency and decompensation. He died in hepatic come on 5 November 1953.

Necropsy fundings Necropsy disclosed the liver to be involved by far advanced Laennec's curhosis displaying the classical hobiail morphology Other findings were esophageal varices acute esophaguis multiple gastric ulcerations splenomegaly ascites and total alopecia

DISCUSSION

The appearance of alopecia universalis in the terminal stages of Laennees a cirrhosis' makes a causal rolationship between the two seem possible and even probable, particularly in view of the known propensity of cirrhosis to produce diminution of body hair It is of interest that alopecia was ostonsibly the presenting symptom of cirrhosis in this patient.

The mechanism by which cirrhosis could give rise to universal alopecia is not entirely clear. The estrogen retention which fre quently complicates cirrhosis is thought to be the cause of the hair loss that is occasionally seen, through the agency of pi tuitary mediated suppression of testicular function. In males without liver damage, however massive doses of estrogens do not produce total alopecia, and neither does postpuberal ca tration lead to universal (or even pronounced) loss of hair shore over, the alopecia seen in hypogonadism usually does no it volve the scalp Some factor in addition to estrogen retention and gonadal suppression must therefore have contributed to cause of the universal alopecia seen in this patient Lect certain members of the B complex of vitamins can cau normalities of the skin and hair, and the vitamin B def which was undoubtedly present in this patient may have disposed to a total alopecia In addition, one or severe toxic metabolites that accumulate in the body as severe hepatic insufficiency may be detrimental to i licle Other occasional causes of symptomatic hypopituitarism, myvedema, advanced malnutritio present in this patient.

A case of classical Laennec's cirrhosis accompanied by alopecia universalis was presented. The cause of the loss of hair was thought to be estrogen retention with attendant gonadal suppression in combination with other unknown factors-pos sibly vitamin B deficiency or endogenous intoxication Cirrhosis should probably be added to the list of possible causes of symptomatic alonecia universalis

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MANAGEMENT OF RH-NEGATIVE PATIENT

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Extensive Rectal Carcinoma With Pelvic Evisceration and Uretero Ileostomy

JAMES M STOKES Captain, MC USA
PHILIP A BERGMAN Lieutenant Colonel MC USA

ANAGEMENT of extensive carcinoma of the rectum, in cluding resection of adjacent viscera, is a problem which has confronted surgeons with increasing frequency since the development of adequate supportive therapy and current surgical technic in the surgery of cancer. This case report of an extensive carcinoma of the rectum in a young man is of interest from the standpoint of the unusual size of the tumor and as an example of a method in management of the urinary tract following cystectomy as a part of pelvic evisceration.

CASE REPORT

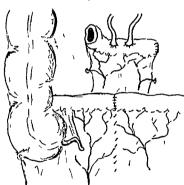
A 26-year old man was admitted to an Army hospital in Europe in December 1954 and transferred to this hospital on 28 December He had noted abdominal discomfort increasing frequency of bowel movements and weight loss over a period of 9 months

The patient appeared to be acutely ill Physical examination revealed moderate abdominal distention and evidence of marked weight loss. A large circumferential exophytic carcinoma of the rectum was present about 5 cm from the anus. The tumor overlay the left lobe of the prostate and almost completely obstructed the bowel lumen. A biopsy of the lesion confirmed the diagnosis of cancer On 30 December a prox imal transverse colostomy was performed for relief of obstruction. Following this the patient improved considerably with supportive therapy including whole blood transfusions nevertheless he continued to have marked discomfort because of pain and tenesmus from the large pelvic mass and because of discharge of necrotic tumor tissue through the rectum Intravenous pyelograms revealed a normal functioning urinary system On cystoscopic examination the left half of the trigonal area was found to be markedly elevated and distorted No definite gross invasion of the bladder mucosa was observed. The patient had difficulty in voluntary urination necessitating continuous Foley catheter drainage. There was no clinical or laboratory evidence of distant meras tases

On 14 January 1955 an exploratory laparotomy was performed. The liver and peritoneal cavity were free of apparent metastases. The tumor

Fm Amy d Navy H p tal H t Spr g Ark Capt St k s 1 w s gned to U S Amy H p tal Fort Ho d Tex

completely filled the pelvi elevating the bladder and other viscera out of the true pel is. The regional nodes and the persaort conde were m rkedly enlarged above the level of the inferior mesenteric arrery Because of the size of the carcinom and it fixation to the prostate and base of the bladder t was believed that any attempt at local excis on would be futil as a definitive procedure for curing the p tient A modif d pelvic evisceration was carr ed out in the manner reported by Bricker and Modlin temoving the rectum sigmoid bladder prostate and regional node s an abdominop rineal procedure. Node resection was carri d as high as the lev I of the duodenum. The internal (hypnpastric) and external iliac nodes were resected with the specimen. exposing the internal iliac ves els without resecting them 1 The hypogastric arteri s we e ligated in continuity and the middle hemorrhoidal ves Is were divided at the r or gin. Per neal resection although diffi cult was carried as filteral is possible



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The ust swer divid dabo t 1 ach b youd the common iliac tery Care was tak n to pr serv the blood upply of the distal portion of the ureter. The ureters were then anastomo ed with interrupted 0000 chromic gut on an t umat c needle to the isolated segment of ileum bout 5 inche for the leocecal junction in the technic de cribed by Cordonn er suturing m cosa of ileum to ureter A few sutures were

placed between the adventitia of the ureter and the serosa of the ileum Because of the absence of dilatation of the ureter few surures were required to obtain a satisfactory anastomosis. The mobility of the isolated ileal segment was advantageous in preventing tension on the anastomosis. The distal end of the ileal segment was used as an ileos tomy for the urinary outlet. The relationship of the isolated segment and uretero-leostomy is represented in figure 1. Sigmoid colostomy was performed on the left side. The patient had an uneventful post operative course with the exception of an episode of homologous serum jaundice occurring about 8 weeks after operation. A mild episode of pyelitis was controlled with antibiotics. Postoperatively the patient gained 25 pounds and managed his ileostomy without difficulty. Intra venous pyelograms were normal at the time of his discharge from the hospital.

COMMENT

The unfixed specimen revealed the longitudinal extent of the tumor to be 15 cm with the distal margin 4 5 cm from the anorectal junction The tumor measured 15 by 10 by 13 cm Figure 2 reveals the extent of the carcinoma grossly in the fixed specimen



Figure 2. Posterior view of operative spec men (fixed)

Cross sections indicate the proximity to prostate seminal vesi cles and bladder (fig 3) The danger of attempting to dissect the tumor from these organs without inclusion of adjacent viscera was apparent from microscopic examination of a section through the adherent areas Sections of 97 grossly enlarged lymph nodes did not show metastases The carcinoma was moderately differ entiated and there was evidence of marked inflammatory change throughout all layers of the rectum and pelvic tissue The in flammation undoubtedly explained the patient s marked tenesmus and nam



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The occurrence of a carcinoma of this size with fixation an terrorly presented a problem of management of the greters follow ing exenteration of the pelvic viscera An isolated segment of lleum functioning as an ileostomy as developed by Bricker was used in this patient this method offers the advantage of separation of the urinary and fecal contents (fig 4) A follow up of his series reported through 3 years has shown no evidence of hyperchloremic acidosis From the standpoint of the patient avoidance of a wet colostomy also seems highly desirable. The use of an isolated segment of sigmoid colon in a similar manner has been reported in suitable cases this method obviates the

entero-enterostomy because the distal colon is brought out as a colostomy



F gure 4 Detail of positions of ileostomy (on the 1ght) and colostomy (on the left)

SUMMARY

The occurrence of an unusually large carcinoma of the rectum in a young man is reported Fixation of the carcinoma to the adjacent base of the bladder and prostate necessitated pelvic evis ceration. The method of management of the unnary stream using an isolated iteal segment as described by Bricker, provided satisfactory results in this patient.

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Amyoplasia Congenita

Report of a Case

LAWRENCE H GOLDEN C pt USAF (MC)
GEORGE D WEICKHARDT M 1 USAF (MC)

AMYOPLASIA CONGENITA is a rare multiple developmental atticular rigidity which produces fixation of joints similar to that seen in fibrous ankylosis but in which there is no clinical or laboratory evidence to suggest an inflammatory process. The term multiple congenital articular rigidity, used by Sheldon describes the clinical picture of the disease but gives no clue as to the cause.

According to Brandt other anatomic abnormalities which may occur in these patients are subluxation of hips elbows knees and thumbs shortened necl torticollis kyphosis scollosis digit webbing polydactylia hernia genital deformities and hydrocephalus

In a recent article by Lemmon and Vail this unusual clinical entity was fully described Their review of available literature indicated the infrequency of case reports We are presenting an additional case to illustrate a form of the disease which may suggest progressive features in respect to the muscular changes present

CASE REPORT

A 24 year-old off cer wa admitted to this hospital on 19 March 1955. He th ught that he w s developing muscular dystrophy and was referred to us fo this reason. The patient stated that he had had curvature of the fing is of both hands since hildhod. He was cert in that this curvature was present when he was 11 years old. In November 1952 when the patient developed an upper respiratory infection a physicion expressed some interest in the deformity. A year lat it when the patient entered in Hiardy service the condition ws recorded and was believed to be without clinical ignificance. Mu cular acrophy in the interosseous pices had evidently been present if it many years. In October 1954, the patient believed that the muscl is of the right thimb were becoming atrophied. At no time did he experience any pain or other sensory disturbance.

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A history of familial diseases of the nervous or musculoskeletal systems was not elicited

Physical examination was negative except for the inflexibility of the hands (fig. 1). All fingers were partially flexed at the interphalangeal joints and could not be fully extended with the exception of each thumb. There was some limitation of motion involving the abduction of the fingers. The latter seemed related to muscular weakness. Another finding of note was the atrophy of the interosseous and thenar muscles on both hands—more marked on the right than on the left. Neither fas ciculations not sensory abnormalities were detected.

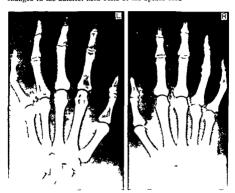


Figure 1 Photograph of bands showing muscular atrophy and fingers fully extended.

Blood serologic tests for syphilis were negative. Spinal fluid pressure was 130 mm of water. The Queckenstedt test gave normal results Examination of the spinal fluid showed 2 lymphocytes per cu. mm and the total protein was 25 mg per 100 ml. Serologic tests of the spinal fluid for syphilis were negative, and the gold curve was normal. The routine blood count and urinalysis showed no significant abnormality. The blood sugar and nonprotein nitrogen levels were normal. The blood calcium was 10 mg per 100 ml. phosphorus 467 mg, per 100 ml. and alkaline phosphatase 3 l units per 100 ml. Glodansky). Roentgenograms of the hands showed minimal osteoporosis without ankylosis (fig. 2) and roentgenograms of the skull chest, and entire spine showed no significant abnormalities.

According to the literature, the cause of this disturbance is not clear Sheldon' suggested a primary aplasia or hypoplasia of certain muscle groups as the initial lesion while Brandt' thought that it was a neurologic disease related to the group of progres sive muscular atrophies

Extensive nathologic study has been wanting because of the rants of the disease Brandt reported on a biopsy of the quadri cens muscle which showed increased interfascicular connective tissue and atrophy of muscle cells together with degenerative changes in the anterior horn cells of the spinal cord



. Roenteenoer ms f the hand

SUMMARY

A patient with amyoplasia con_enita a rare multiple developmental articular rigidity is reported. The clinical picture was characterized by curvature of the fingers of both hands existing since early childhood muscular atrophy of the interesseous spaces the absence of sensory disturbances and a negative familial history Because of the localization to the hands and absence of other lesions it was thought to be benign although rather recent changes in the musculature about the involved joints raised the question of progression

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Scleroma in the United States

Report of a Case in a Native

BYRON G MCLIBBEN Colonel MC USA

SCLEROMA was first described in 1870 as a hard, punless, proliferating, tumorlike disease of the nose, extending to the skin of the lip and into the nasopharynx Because of the hard consistency and original location in the nose, Hebra and Kaposi gave it the name rhinoscleroma

It later became evident that the scleromatous process may occur anywhere in the respiratory tract, from the nose to the bronchi and that in many cases the nose is not involved at all ² At the Second International Congress of Otolaryngology in Madrid, in 1932 the more inclusive term scleroma was therefore unani mously adopted ³ Kouwenaar ³ has suggested the term respiratory scleroma

Scieroma is a world wide disease with its principal focus in eastern Europe Although increasing in the countries of the Western Hemisphere, especially in those of Central and South America, it is still rare in the United States *

In 1893 Jackson' reported a case of rhinoscleroma in an immigrant from Hungary While the diagnosis was not confirmed by histologic examination this report was the first scientific paper on scleroma to be published in the United States

In 1896 Wende' reported a case of rhinoscleroma in a boy whose birthplace was Buffalo, h it Histologic examination was suggestive of scleroma but it was difficult to demonstrate the presence of the Frisch bacilli in the cells. An organism not unlike the bacillus of Friedlander was isolated on culture 'While this diagnosis was not definitely confirmed by laboratory methods, this represents the first case of scleroma in a native of the United States recorded in medical literature

The first case of sclerora definitely confirmed by histologic examination and culture was reported by Freeman in 1900. The patient was an immigrant from Russia

In 1921 Watlins presented a case of scleroma in a native of Maryland This patient had visited the West Indies and Central

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American countries where he went as a fireman on a ship. This was the first case in a native of the United States in which the diagnosis was unquestionably confirmed by histologic examination The tissue for this examination was removed from the larvnx at autopsy Unfortunately culture was not done in this case

In 1940 Cunning and Guerry made a careful review of the literature and listed 103 cases of scleroma in the United States and Canada (the exact number in each of these two countries was not stated) Seventeen of the patients were native born an observation confirmed by Cunning Represented in this series of 103 cases are a number of cases apparently not elsewhere recorded that were compiled from answers to questionnaires sent to otolaryngologists in the United States. One of these na tients treated by Tarrell in 1890 was a native of New York We are unable to determine if the diarnosis was confirmed by bionsy and culture

As previously noted the diagnosis was not definitely established in some of the cases listed by Cunning and Guerry In two of these where biopsy specimens had been obtained there was controversy as to whether the pathologic diagnosis was seletoma or sarcoma

We made a careful review of the literature from 1941 to the end of 1954 and found an additional 19 cases among immigrants 92 among natives and 1 in which the records of the patient s nativity age and sex had been lost Included in this group are Wexler's a cases additional details of which are listed in table 1

TABLE 1 S f l ma f nd by p t cult d b psy 27 p t t w th t ph b t 10						
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This makes a total of 145 patients by the end of 1954. Thirty nine of these were native born. Our patient a native of Arizona brings the total to 146 at the time of this writing (table 2)

This of course does not represent all of the cases that have occurred in the United States Godwin observed about 10 cases at the Harbor General Hospital in Torrance, Calif With the exception of one—a Uto Indian woman who had lived in New Mexico—these patients were members of two Mexican families. They ranged in age from 7 to 60 years, and the adult members were born in Mexico.

TABLE 2 Patients with scleroma in the United States

Date reported	Author	Foreign born	Native born	Birthplace unknown
1941 1942 1942 1943 1943 1943 1947 1948 1948 1949 1949 1950 1951 1952 1953 1953 1954 1954	Goldstein ¹¹ Cunning and Guerry Dixon Dixon Dixon Kelleri Cunning Hara and associates Hara and associates Wexleri Wexleri Kline and Brody Som and Jaffin Miller A H Olson Morwitz A H Olson Morwitz A H Russell and Associates Holovet and King Tutch Titch The A Dwyer Holing and associates Dwyer Holing and associates Dwyer Holin der and Scheef Folbre and a Sociat M Kibben and B yliss	1 86 1 1 1 1 2 1 1 2 1 1 3 3 1 1	17	1
	Total	105	40	1

Cas pr tdhr

A definite diagnosis of scleroma is best made by examination of a biopsy specimen Histologically the lesion is a granuloma tous type of chronic inflammation associated with fibrosis. The cellular infiltrate is composed mainly of plasma cells and lympho cytes. Scattered throughout this infiltrate are three characteristic types of cells. The first type is the Russell body, which is a rounded homogeneous, eosinophilic cell sometimes containing an eccentric pyknotic nucleus. These bodies apparently represent degenerated plasma cells, are nonspecific, and occur in various inflammatory lesions. The second variety is the Mikulicz cell, which is large (33 to 50 \mu in diameter) with an abundant foamy pale cytoplasm and a relatively small nucleus. The Mikulicz cells are characteristic of scleroma and are usually present in

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the greatest numbers near the surface of the lesion either singly or in clusters. The third characteristic is the Frisch bacillus. This bacterium Klebsiella thinoscleromatis is found in large numbers within the cytoplasm of the Mikulicz cells as well as in interstitial spaces. The feamy appearance of the Mikulicz cells is probably due to the abundant capsular material of this bacterium. The presence of Russell bodies. Mikulicz cells and Frisch hacilli establishes the diagnosis of scleroma.

Isolation of h. rhinoscleromatis from secretions from the nose and throat or from biopsied tissue is an aid in confirming the diagnosis of scleroma. These gram negative encapsulated rod bacteria are easily cultured on cosinmethylene blue agar blood agar or plain agar of these media are produced large translucent mucoid coalescing colonies.

has demonstrated that the hiebstella bacterial isolated from patients with rhinoscloroma are antigenically and biochemically homogenous and has characterized the species on the basis of their inability to split dilettol urea and the organic derivatives distribute citrate and mucate as well as a negative Vogos Proskauer reaction Final identification of the species has the inspecies of the species have reaction for the presence of somatic smooth O antien 2 and cansular hantiers.

Although the role of h rhimoscleromatis as the causative agent of scleroma has been doubted by numerous authors the constant presence of this organism in scleromatous tissue and its frequent presence in the masal secretions of persons with scleroma and of their contacts along with its relative absence otherwise lead one to believe that it is a causative factor Although the third postulate of hoch the production of the disease by inoculation of the hlebsiella bacteria has not been accomplished there is otherwise little doubt that this organism is the causative agent of the disease Recent evidence that the disease responds favorably to antibiotics to which h rhimoscleromatis is sensitive. In the prolongition of the disease of the disease that the organism is the causative agent of at least a factor in the prolongition of the disease

Schindler' treated five patients with thinoscleroma in his private practice. Two of these were natives of the United States and the other three were foreign born one from Pakistan one from San Salvador and one from Picaragua & rhinoscleromatic was identified by culture in all five cases A biopsy specimen was obtained from one patient and it showed the characteristic histologic changes of seleroma. All of Schindler's cases respond of favorably to treatment with terramycin (brand of crystetra cycline) While Wexler's series is small the finding of seven cases of seleroma arong 27 patients with atropher chintits sug

gests that a substantial proportion of all patients in whom a diagnosis of atrophic rhinitis has been made may actually be suffering from early scleroma

CASE REPORT

A 21 year old Mexican with a 4 year history of nasal obstruction hoarseness and dyspinea was drafted into the Army on 4 March 1953. He was a native of Arizona and had not left the state until he entered the military service.

On 7 May 1953 he was admitted to a U S Army hospital A diag nosis of papillomatouslike lesion of the larynx was made and he was transferred to this hospital

The history disclosed that for many years he had been bothered with a thick yellow nasal discharge and postnasal drainage. Dyspine a on exertion had been increasing and the only relief from this was to decrease his activity. He believed that the shortness of breath was due to some obstruction in his throat interfering with the air getting down into his lungs. Hoarseness which had been present for a period of 4 years had become worse during the last year. He was awakened every night by the presence of thick tenacious mucus in the throat Coughing to remove the mucus which at times was bloody caused some shortness of breath.

One of his sisters had similar symptoms. Five sisters, four brothers and his parents were in good health

On examination both nasal passages were found to be partially obstructed by crusts and yellow purulent exudate beneath which were granulomatous masses that bled easily A similar condition was present in the nasopharynx On indirect lary ngoscopic examination nodular masses were seen on the epiglottis both ventricular bands both vocal cords and in the subglottic region. The glottic aperture was markedly decreased and there was an inspiratory wheeze. The remainder of the physical examination was within normal limits.

Roentgenographic examination demonstrated soft tissue masses in the larynx and superior portion of the trachea with marked narrowing of the airway at the level of the cricoid cattilage (fig. 1)

Biops; specimens were removed from the left nasal fossa on 14 May 1953 and from the left arytenoid area on 18 May 1953. Both specimens revealed similar pathologic pictures. The biopsied tissue consisted of irregular gray white fragments Microscopic sections were covered with stratified squamous epithelium beneath which was a stroma composed of loose connective tissue containing numerous small blood vessels and densely infiltrated with inflammatory cells. These were chiefly plasmocytes with lesser numbers of lymphocytes and occasional eositophils neutrophils and macrophages. Distributed throughout the stroma were large oval to round Mikulicz cells usually with a

small nucleus and num ous closely packed cytoplasmic vacuole giving the cytoplasm a f amy appearance (fig 2) M ny of these cells

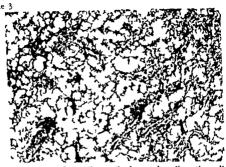


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especially are not the prophery contained the encapsulated bacill k b no cl omat s (fig 3) These org nisms were also noted in r cro phages Scattered throughout the infl mm tory tiss es were large deeply eosi philic round cells (Russell bodies) which appeared to be undergo ng hyalinizat on (f g 4) Many narrow bands of collagenou connective t ss e were spre d throughout the less n The diagnosis was scleroma of the nose a d l rynx

Cultur of purulent nasal secretions o blood agar plates revealed small numbers of Corvnebacterium e se and nonhemolytic trepto cocci However the p dominant og nism on this medium con isted of a gram negative encapsul ted rod and practically pure cultures were obtained on eosinmethylen bl e g Agglutinat on te ct ons de ti fied the organ sm s Kl bs ella type 3 (k b o cl omat s) Culture from scleromatous tissue from the same patient consisted entirely of thi same klebs ella rgani m Antib otic sens ti ty tests performed

by the disk method on blood agar plates gave the results listed in table 3

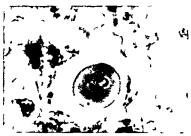


F gare 2 Mikulicz cells are the large pale cells with small mucle and foamy cytoplasm Scattered irregularly among these are bards of jibrous tissue n who ch a e small numbers of lymphocyte and plasma cells Several p ominent da k staining Russell bodies are also visible (Hematoxyl n and eosin stain x 300)



Figure 3 Fich bacilli (k. h. moscletomats) statued with Warthin Starry silver impregnation are numerous: the lowe half of the M. kulicz cell. hote the capsule surrounding dark staint g organisms (x 4500)

In tially 250 mg of terramycin 4 times daily w s p crib d S x days later when th organism wa identified and sen itivity to ts completed the medic ton wa changed to ureomycin in the same dosage



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TABLE 3 5 ty /K h os 1 mat t (d km ib d)

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With 3 weeks from the time treatment was started the wheezing had stopped h ar eness w s less noticeable and the les o s in the nose and larynx sho ed mark d improvement. The patie t w s disch rged from th Army on 19 Ju e 1953 nd wa gi en en ugh aureo mycin for one more weks tre tment. The tot I time f tre tment was one month

The par ent's reply to a follow up letter 19 mo the later r we led that he w s fe ling s w ll a when he left the s rvice He further st red that he h d n t o ulted a pr v te physic an

COMMENT

It is interesting to note that this patient responded rapidly to treatment with aureomycin Botros and associates29 treated 14 patients with terramycin, aureomycin, or streptomycin and commented that aureomycin appears more rapid in action on laryngoscleroma than other antibiotics " However, only one of their 14 patients was treated with aureomycin

SHMMARY

A review of the literature on scleroma shows an increasing number of cases being diagnosed in the Western Hemisphere

Originally considered to be a disease of the nose, the most recent opinions hold scleroma to be a disease which may involve any part of the respiratory tract Diagnosis is best made by ex amination of a biopsy specimen, which will reveal three charac teristic types of cells the Russell body, the Mikulicz cell, and the bacterium h rhinoscleromatis (Frisch bacillus)

Diagnosis of a case of scleroma in a native of Arizona was confirmed by histologic examination, which revealed the typical cells The patient responded favorably to treatment with aureomycin his symptoms were relieved, and the lesions in the re spiratory tract regressed

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Hemorrhoids and Anal Fistula in Infants and Children

ALVIN O UHLE M D
DONALD CAMPBELL Lieutenant Colonel MC USA

A NORECTAL diseases, excluding congenital anomalies, are uncommon in infants and children Although rectal prolapse, polyps, anal fissure, and proctitis are occasionally encoun tered, hemorrhoids and anal fistula are extremely rare in patients under the age of 12 years

That hemorrhoids occur in infants or young children has been a subject of debate for many years As early as 1866 Gosselin' remarked "I have found in some works indications of hemorrhoids in children but the details are too meager to assure oneself that something else was not the matter, $e\ g$, rectal polypus We must not forget, in fact, that up to our own day, men have admitted the existence of hemorrhoids without making local examination, and simply because there was present either bleeding from the anus, or pain during defecation I will believe in hemorrhoids in children when I shall have seen them, or when a serious observer, after a careful examination, shall have affirmed that he has seen them "1 In 1873, when Bouchut' was asked if hemorrhoids occurred in young children, he answered No Children do not have hem orthoids any more than they have varicose veins For the past 20 years children have been brought to me who were said to have hemorrhoids, because of bleeding after defecation, or because of a small anal tumor All of these cases were errors in diagnosis

Up to 12 or 13 years of age I know of no authentic observation of hemorrhoids, and I believe that cases of this nature are all to be referred to rectal polypi *1

While the above statements are obviously not acceptable today, they are, nevertheless, of historical interest and indicative of the rarity of this condition Modern texts on pediatrics and proctology teach that hemorrhoids are seldom found in infants and children Bacon' stated that "the condition in infancy would constitute a medical anomaly" yet he referred to 3 700 cases of hemorrhoids tabulated by Smith 'of which 28 were found in children under the age of 9 years There is little in the recent American literature on this subject. Schapro, in evaluating 2,700 pediatric proctologic conditions found 25 cases of hemorrhoids, 5 of which occurred in

Frm U. S Army H p tal Fort Ril y Kan Dr Uhl 1 n w t 3880 N E Alam d D Portla d Oreg

newborn infants 11 in infants and 9 in children. He believed that the occurrence of internal hemorrhoids in children might still be seriously questioned because in early life the middle and inferior hemorrhoidal veins have competent valves

Fistula in and perhaps not as unusual as hemorrhoids is also rare in children Holt and Howland stated that ischiorectal ab scess is not a rare condition even in infancy but that fistula as a sequela of incision and drainage is most infrequent Bacon re norted a series of 100 fistulas and abscesses of which only 39 occurred in infants. In a series of 1 801 anal fistulas Bute found only 9 in infants. In Schapito's report there were only 20 fistulas Venturo reported 300 abscesses and fistulas which included only 7 fistulas in infants. These figures would indicate that about 1 percent of all fistulas occur in infants, and that fis tulas constitute about 1 percent of all nediatric proctologic dis AASAS

In the past year at this lospital we have had the opportunity of treating a 4 year old child with bleeding hemorrhoids and a 41/ month old infant with a fistula in ano. The rarity of these two condition in infancy and childhood has prompted us to submit these case reports

CASE REPORTS

Ca e I A 4 ve old white child wa admitted to the hospital in June 1954 becau e of profu e rectal bleeding following pass ge of a hard stool Past hist ry revealed that he had had troubl with con t pation since birth and had pa ed small mou is of bight red blo d inter mittently with stools since shi was 12 days old. When shi had been an nfant her mothe h d n ted a gradually incr as ng p otrusion at the nus and when the child w s 19 months old inci o nd evacuation f an ext rnal thrombotic hemorrhoid had be a pe I tmed Attempts t tegulate her bowel hab to with mineral oil mit with mly pit I success and constin t on with intermittent bleeding persisted. In recent months the mother again noted enlarging uregul r protrusions t the nus On th m ming of admission aft r passing a co stipat d stool the child had a severe rect I bemorrhag

Exam nat on rev aled a pale 4 year old gul who appeared to be n r mally d veloped. The liver and pleen were not n loable and there was n evidence of p real hypertension. Visual examination of the anus re vealed a osette of I tge hemo thoughl m sees protruding from the anus (fig 1) No other abnorm I tes we e found in til laboratory tudies were a follow Red blood cell count 3 150 000 per cu. mm hemogl bin 61 gram p r 100 ml morphologic ed cell f ndings normal white blood cell count 5 350 per c s. mm bleeding time 2 mi utes coagul tion time 4 minutes platelet count 158 000 cephalin choleste of floccu lation (74 and 48 hour) neg t e serum bilirubin 0 70 mg per 100 ml

Findings of a urinalysis and of a roentgenogram of the chest were norma l

A blood transfusion of 300 ml was given and the patient carefully observed No further hemorrhage occurred but a small amount of blood mixed with each stool continued to appear. Iton preparations were ad ministered orally and the hemoglobin gradually rose to 10 6 grams while the red blood cell count increased to 5 140 000 per cu. mm An esopha gram and upper gastrointestinal and barium enema studies were normal



Figure 1 (ase 1) Photograph of la ge prolapsing bemorehoids in a 4 year-oid

Proctosigmoidoscopic examination was performed under general anes thesia no abnormalities other than the large internal external hemor thoids were noted Because bleeding had practically ceased in this young patient operation was withheld and she was discharged from the hospital on the 10th day following admission Feosol (brand of ferrous sulfate) and petrogalar (brand of aqueous suspension of 65 percent min eral oil) were prescribed

Four weeks later rectal bleeding again increased in spite of improved bowel habits Laboratory determination revealed that the hemo globin had fallen to 95 grams per 100 ml and the red blood cell count to 3 840 000 per cu mm Examination revealed no essential changes Hemorrhoidectomy was advised. On 16 August 1954 hemorrhoidectomy was performed Four large combined hemorrhoidal masses were excised. The microscopic pathologic report confirmed the fact that these were hemorrhoids The postoperative course was satisfactory with only mild bleeding at stool during the first few days The patient was improving steadily at the tim of her discharge on the 11th postoperative day

Discussion The cause of hemorrhoids is not definitely established The most acceptable theories are that they arise secondary to anal infection and constipation portal hypertension constitu tional diseases severe diarrhea and straining Of these straining due to constipation is undoubtedly the most common cause of hemorrhoids in children It is certainly the most plausible ex planation for the hemorrhoids in this patient who had been af facted with constinution since infancy and at 19 months of ane had developed an acute thrombotic external hemorrhoid A thor ough investigation had revealed no other cause for hemorrhoids

Ordinarily small hemorrhoids in young infants and children may be treated conservatively If the cause of the straining-such as constination crying coughing and diarrhea-can be alleviated the hemorrhoids will usually subside In our case the constination responded poorly to treatment and bleeding became severe Hem orrhoidectomy was considered necessary The patient has now been followed for almost 1 year and there has been no further bleeding Fxamination reveals no evidence of recurrent or residual hemorrhoids and the anorectal canal appears normal The hemoglobin and red blood cell count remain normal. The result was

Case 2 A 4 -month-old whit boy w s ho pitalized a Nov mber 1954 for co rect of a chronically dr ining perianal opening Past history e eal dan smal full t m dels ery and average neon tal development D try nd bowel habits were not unusual There was no history of rectal t auma or exposure to tube culosis. When the child was 3 months old a small tender swelling about 3 cm from the nus in the right terol teral quadrant was oted by the mothe. This was diagnosed a furuncle and neised Drain ge continued for 3 weeks following which the baby w s refe ed to the surgical service

Ex min t n reve led small granul ting sinus at the site of incisio with a p loable subcutane us tr ct. This wa probed ind led directly to the an sect I line No internal open ng wa palpated or visu lized through the a oscope A diagnosis of f stula in an was m de and the p tient was dmitted to the hospital fo an op ration. On 29 November und r gen t l nesthesi a pinpo nt intern l open ng was found in a crypt directly opposit to the external orific (f.g. 2) No other anorectal abnorm lities were need F stulocomy ws done a cluding division of th extern I nal sphinct muscle Th patient was d scharged on the first po toperativ day nd d ly cle nsing and dilatati n were per formed in the ourp tient clinic Healing w s complet within 3 weeks Follow up v s t to dat have e e l d no vidence of recurre ce r 1 continence

Discussion Fistulas are thought to arise in anal crypts in fected as a result of constipation diarrhea or other rectal trauma There is apparently no age predisposition in infancy except that



Figure 2 (case 2) Photograph demonstating complete anal fistula in a 4½-month-old infant

these lesions occur more frequently after the fourth month of life According to Gabriel fistulas in infants under 1 year of age rarely occur in females Venturo pointed out that fistulas in adults are generally posterior, whereas in infants they are more frequently lateral. This difference he believes is due to the lack of anorectal angulation and to the prominence of the lateral crypts in infants. In addition, fistulas in infants are usually of the simple type, having only one internal and one external opening. Although often subcutaneous they may pass deep to the external sphinicter musculature. Bacon presented a photograph of such a complete fistula in a 5 week old infant. The treatment of fistula in and in infants is simple fistulotomy, and complete healing usually follows promptly.

Except for the absence of antecedent constipation, diarrhea, or other rectal trauma, our case of anal fistula is typical of this condition in infants. The patient recovered completely following simple fistulotomy, he has now been followed for over 6 months and there is no evidence of incontinence or recurrence.

SUMMARY

Hemotrhoids and fistulas in ano in infants and children are rare A case of severe bleeding hemotrhoids in a 4-year old child and one of an anal fistula in a 41' month old infant have book

presented The literature has been partially reviewed and some special features of these conditions have been discussed

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PRENATAL CARE

Pren tal c re s helpf l to ll w men and it is essential for co iderable number who mu t avoid d saster It is oby ous the pregnancy labor and delivery are physiol gical proce es a d it s also oby th t all won n are t norm I physiolog cally Th refore th objective of prenatal car i to detect nd c rect stuati n th ta not physio logic lly orm ! For e nple a wom n with imp ired kidney f netion may have no signs of the we kne s until the str in of p gn ney brings out the defect Tubercul sis m y in c ease th danger of pregn nev espec lly during the pe iod of lactation altho gh there were no signs or ymptom prior to th pregn ncy H art di ease is a h nd cap in the nonor en nt wom n a d the defect s frequently brought out during the preg ancy a d delive y For normal pregn nt wom and in the conditions mentioned it is apprent that p natal ca e is ess nt I for Il It is most difficult to dr w a line b tween halth a d d's se nd what i thought to be a norm I physiol e c I proce s often de elops neo a patho log cal state

-FRANK E WHITACRE M D

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ANNUAL MEETING OF MILITARY SURGEONS IN WASHINGTON, D.C., NOVEMBER 7.9

The 62d annual convention of the Association of Military Surgeons of the United States will be held at the Statler Hotel, Washington, D C from 79 November 1955 In addition to the program listed below, panel meetings of the dental, sustaining membership, sanitary engineering, and veterinary sections will be held on Wednesday, 9 November

Monday Morning 7 November

Presiding M | Gen Jos ph I Martin MC USA President

- A s ciati n President s Add e s....Maj Gen Jo ph I Martin MC USA Speci 1
 A sistant to Th Surgeon G neral D pa tment of the Army
- W. Icom g. Rema ks.—Frank B. B. ry M. D. Assistant Secretary of Defense (Health and Medical)
- Ten Yea of Atome Meden Shi lds Warr n M D Advis r to the Atomic En rgy Commi ion Prof sor of M dicine Harvard Medical School
- M l tary Hosp tals—Maj Ge Stlas B Hay MC USA The Surgeon Gen ral Dep rum nt of the Army
- Med cal P sonnel Problems n th M lit ry Services—R ar Adm Bartholomew W Hogan (MC) USN The Surgeon General D partment of the Navy
- Depende t C e in the Military Services—Maj Gen D n C Ogle USAF (MC)
 The Surge n Gen ral D partment of the Air Force
 Prevent ve M d c n an Atom c Age—Leonard A Sch le M D The Surgeon
- General U S Public Health Servi e

 Medical Aspects of Rad at on Energy as Appl d to the Hematop tic System—
 William S Middleton M D Chief M dical Director Veterans Administration.
- The FCDA Medical St. kp le—John M. Whitney M. D. Medical Director USPHS Directo He lth Offic Federal Civil Defens. Admin stration
- Med c al Suppl s fo M ss Casualities from a Pharmaceutical P od ce s v wpo t—Raymo d M R ce M D Execut ve Ductor Medical Research Th Lilly Re earch L boratori Eli Lilly and Compa y

Monday Afternoon

Pres ding B ig Ge Harold H Twitchell USAF (MC) Surgeon Continental Air Command

Them Med cal Effect of Nuclea W rfa e

- Introduct on to Pobl ms—Big Gen. J m s P Cooney MC USA Deputy Surg n G eral Departm t of the Army

- M b l nd S cond ry M l l l ur __Condr J h A O Do ghue (MC)
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Tuesday Morning 8 November

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- T tm t / M Th rm l | yur __C pt. D ald W M II (MC) USN Ch f f Surgery USNH N wpor

Tuesday Afternoon

P d g R ax Adm Irw L V Norm (MC) USN A t t Ch f f
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- CotfDly nT tm t_Jh M H ward M D Ch irma Dep tm of Surgry Em y Un er ty S h 1 f M d

- Blood and Plasma Volume Expanders for Mass Casualties—Capt Lloyd R Newhouser (NC) USN Ret. Director John Elliott Blood B ak of Dade County Fla
- Anosthesia and Sedation fo Mass Casualties.—Col Harvey C Slocum MC USA Chief Anosthesia and Operative Service Walter Reed Army Hospital
- Summa y-Maj Gen I S Ravdin MC USAR John Rhea Barton P of essor of Surgery University of Pennsylvania School of Medicine
- D scussion—Led by Rear Adm. Richard A Kern (MC) USNR Ret Professor and Head of Department of Medicin Temple University School of Medicine

Wednesday Morning 9 November

Presiding: Rear Adm Thomas F Cooper (MC) USN Assist nt Chief for Planning and Logistic Bureau of Medicine and Surgery Department of the Navy

Theme Organ zation fo the Manag ment of Mass Casualties

Int oduct on to P oblems-R at Adm Thomas F Cooper (MC) USN

- Public Health and San tat on Problems n Nuclear Warfa e-Robert Leslie
 Smith M D and Albe t H Stephenson Sanitary Enginee Director USPHS
 Directo Sanitation D vision Health Office FCDA
 - Welfare Problems n Nucl a Wa fa e-Honorable Charle I Schottland Commissione of Social Security Department of Health Education and Welfare
- Role of Nurs s.—Ceculia H Hauge R N Director Nursing Service Department of Medicine and Surgery Veterans Adm nistration
- Role of Med cal Serv ce Corps Offices in the Management of Mass Casualt es
 —Comdr Kenn th L knight (MSC) USN Division of Preventive Medicine
 Bureau of M dic ne and Surgery Departum to fith Navy
- The Role of D 1 tians Phys cal and Occupational Therap sis in the Manage ment of Mass Cas all ess—Col Hart et S Lee WMSC USA Chi f Women's Medic 1 Specialist Cops Office of The Surgeon General Department of the Army
- Rol of Elst d and Technical Asstants—Maj John C. Delahunt USAF (MSC) Directorate of Plans and Hopital zation Office of The Surgeon General D partment of the Air Force
- Role of the Vete nary Off c n the Management of Mass Casualt es.—Lt Col L sle C Murphy VC USA Deputy Director Veterinary D vision Army M dical Servi e Gr du te School
- The Role of the Dental Officer—Capt. John V Nissanen (DC) USN Chief Pro thodo to Division U S N val Dental School Bethesda Md
- Rol of Med cal Off ce s—Col Karl H Houghton USAF (MC) Technical
 As stant Hum n F to Air Fo ce Special W apons Center Kirtland Air
- S mmary and Discussio Brig G n Harold W Glartly MC USA Surgeon Fust Army

Wednesday Afternoon

Presiding: Paul M. Ir land M. D. Director Surgical Service. Department of Medicine and Surgery. Veterans Admin. tration.

Theme O ga at on fo the M nagement of Ma s Casualt es

I tod cto to Pobl ms Paul W. beland M. D

Force B se

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- Summary—ClR be L Hull ghort MC USA DpyCmm nd t Army Md 1Srv G dua Sch 1 D us -Ld by Brg G Harld G Sch MC USAR Commad g

NOTICE DISTRIBUTION TO ARMY PERSONNEL

A monthly gratis copy of the U S ARMED FORCES MEDICAL JOURNAL is a slable for all Atmy med cal de partment off cer n active d ty Tho e not receiving a copy should inform their no t publications officer who will requi s tion the To nal from appropriate AGP bl cations Depot in a cordance with AR 310-90

Of tis cop is of the Townal are nit av lable to medical erve if cer of the Army not on active duty They may obtain the four I how ver on a loan bas s fr m their med cal reserve unit

A MESSAGE FROM THE A M A

A survey of physicians being released from active military service has been conducted since I July 1952 by the Council on National Defense of the American Medical Association The survey is primarily designed to obtain information on the utilization of physicians in uniform, the amount of time devoted to the care of military personnel, their dependents, and others, staffing conditions for physicians and allied health personnel, comments and suggestions as to methods to improve further the military medical corps as well as ways in which organized medicine can be of greater assistance to the military physicians

The Council decided to revise the questionnaire after analyzing the replies contained in the thousands of returned forms. It was felt that some of the questions were phrased in a manner which could result in biased or "loaded" replies. A professional testing group was employed to assist with this project. The questionnaire was revised and its distribution began on 1 July 1955. In 1956 a summary report will be made on the results obtained under the revised form.

A brief summary, covering the results of the first two years of the survey, was published last year in the Journal This report, which will be continued in the November issue, covers the period from 1 July to 31 December 1954 During that period 2,373 ques tionnaires were mailed by the Council Out of this number, 1,500 answered forms were returned to the Council This represents a 63 percent response

Age distribution by service Of 1 500 physicians replying, 783 men were between the age of 30 34 years, 465, between 25 29 years 200, between 35 39 years, and 52 were over 40 years of age The largest number of physicians, 639, were in the Navy, 512 and 348 were in the Army and Air Force, respectively One physician was in the Coast Guard The Army had the largest number in the 30 34 age group, and the 40 and over age group Of those in the 25 29 age group, 225 were in the Navy and 134 were in the Army

Date of graduation from medical school A little over half of the physicians who replied, 764 or 50 9 percent, graduated from medical school between the years 1945 1949 The second largest

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group 416 or 27 7 percent graduated between the years 1940 1944 Only 15 were redical graduates before 1940 Seven failed to reply to the question

Years of internship and residency By far the majority of those responding 1 331 or 88 8 percent had 1 year of internship train ing while 158 or 10 5 percent had 2 years Four physicians indi cated no internship while two reported 3 year internship training training while 334 or 30 3 percent who had 3 years of residency training while 334 or 30 3 percent had no residency. There were 260 or 173 percent with 1 year residency 244 or 163 percent with 2 years and 159 or 10 6 percent with 3 years residency training

Occupation at time of entering service. At the time of entrance on active duty old physicians were in residency training and 333 were engaged in speciality practice There were 262 in general practice 192 in internship and 6 in industrial practice A total of 193 reported in other practice and one failed to answer this question

Number of physicians holding board certificates Of the 1 500 physicians responding 970 or 18 percent indicated that they held specialty board certificates Of these 87 were in the Army 139 were in the Navy and 44 were in the Air Force The special ties covered were 18 different fields of which the largest was surgery with 56 the second largest was pediatries with 41 fol lowed by internal medicine with 40 By branch of service 17 percent of those responding in the Army held specialty board certificates 21 8 percent of those in the Navy and 12 5 percent of those in the Air Force

Reserve status Of the 1 500 reporting 873 physicians retained a reserve commission while 613 resigned their commissions Fourteen failed to reply In the Army 044 out of 510 retained a reserve commission while in the Air Force there were 198 out of 346 However, for the \avv 501 retained commissions out of 630

Distribution by rank at time of discharge. At time of separation from active duty 766 physicians held the rank of first lieutenant or lieutenant (junior grade) 680 were captains or lieutenants 40 were majors or lieutenant commanders 6 were lieutenant colonels or commanders and 5 were colonels or captains

THE MEDICAL OFFICER WRITES

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PROMOTIONS OF OFFICERS

The following officers of the military medical services on active duty in the Army, Navy, and Air Force have recently received temporary promotions to the rank indicated

Medical Corps

Will rd P Are t Lt. Comdr USN K nn th R Baldw n, C pt USAF William G B lli g Capt USAF n IdS B ber Capt. USAF Burt n B B rm re Capt USAF ILIB tt LL USN A aM B mast in C pt USAF Rob t W Blal k Lt USN thn E Bys C 1 USAF I h M Bo Lt USN Edward J B wn, C pt USAF 1 hn W Campbell Capt USAF D d B Carm h l It Lt Comdr USN Col USAF Eerth Chik C pt. USAF Phin Coh ph De k lbaum C pt USAF Mila Dklich Jr Lt C mdr USN R betM. Dmm tt Lt C mdr USN Mark S. D C pt. USAF Willim L Euba ks Capt. USAF Charle F dem Capt USAF Ih S. F th t Lt. Comd Walte D F inbe g C pt. USAF Willard R F gus n, C pt. USAF Joh C F1 ga Capt. USAF H ty F g lm n, Lt USN Nathan IE F wl Lt Comd USN that F d k C pt USAF Elm rM Frt Cpt. USAF Frank D Full r Lt Comdr USN R nald F Ga ey C pt. USAF Jm HGill J Cpt. USN Joh P Gl th Capt USAF R bet G odwa Lt USN Fankl M. Gould Capt. USAF H wad R. Gry Cpt. USAF Martin O Grea y Jt Lt. Comdr USN I h S. G use 1 Capt USN Edgar L Guinn, Capt. USAF Pulk Hmlton Jr Lt. Comdr USN WittFH en Lt C mdr USN B toa d] Hartt Capt USAF J me H Harris Lt. Comdr USN Albert H 18 Capt USAF Archi A. H ffm n, Col USAF

Luc us C. Holls ter Jr Lt. Col USAF jam H H lmes Lt Comde USN Ral 18h M Hood Lt Comdr USN Edward A Horr Lt Comdr USN Charles C. Hought J Lt Comdr USN Virgil M H we C pt USAF Wil m E Huddleston, Capt. USAF Thom A Huffman, Lt USN Edwa d A. Hyne Capt. USN William H. K m ny Lt. Col USAF I mes B K nl y Lt US\ H mry N Lukman, J C pt USAF Lui C.K uth Col USAF William G At h Lt Comdr USN Mil C. Krpla Cpt. USN Edward P Kuczk Lt USN Donald A Kulima Capt USAF Walt r W L rso C pt USAF Charl L Lea Lt C mdr USV Thomas H. Lew Lt. Comdr USN Zelig H Li berm Capt USAF Richard E L ura Lt. C mdr USN d S. L n, Lt USN Donald E Ll yd Lt C mdr USN Kurt I L w Lt USN Chal S Lucth Lt Col USAF R bert I McCarthy Lt. C mdr USN Robe t J M Coll st r C pt. USAF Donald E McC llum, Capt. USAF William B McCurch n Capt, USAF Charl J M G ff Capt, USAF Huam W M denhall J Capt. USAF ph A Mont murro C pt. USAF Sam IL Moch Il Lt C md USN ph S Mugla ItLt USAF Robert E. N ur be g r Col USAF Thomas E. Nix J Lt USN Emil J P p C pt USAF William F Park Lt Comdr USN Edward E Parke Lt. Comdr USN R bert A. Patt r n, Col USAF Salvano e A P nni i Capt USAF Chester M. Pe Lt USN Clinto B P tt Lt USN Ri hard L P urciau, C pt. USAF

Medical Corps-Continued

Medical Vorps—Continued

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Joh R Pry Cap USAF
Joh R Pry Cap USAF
Mar R and Capt USAF
Richard L Rus II Cap USAF
Nor Research L Rus II Cap USAF
Mr Research L Rus II Cap USAF
Nor Research Capt USAF
L I W S der tr m, Lt. C mer USN
L I W S der tr m, Lt. C mer USN
Capt USAF
R be B Shop ds Cap USN
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Dental Corps

Dental Corps

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Dental Corps-Continued

Julian J Thomas Jr Lt. USN
H ward k Thoma n Jr Lt USN
J m L Turn Capt USAF
G org W Walter Jr Comdr USN
Chale L Weave Lt. USN

Carl E. Welty Capt. USAF
Jack L. West et Capt. USAF
Wilso T. Wo boys Capt. USAF
Matti H. Za s Capt. USAF
Arthur H. Zign, Capt. USAF

Medical Service Corps

Witer E Beam J Lt. USN
K n eth E. Be k 1 t.Lt. USAF
Wil y M. Bod x 1 st.Lt. USAF
L ol G Bow s 1 st.Lt. USAF
L ol G Bow s 1 st.Lt. USAF
L ol G Bow s 1 st.Lt. USAF
Nobert C Couch 1 t.Lt. USAF
William M Dail y Lt. USN
J k N Fingersh 1 st.Lt. USAF
Nol L F man Lt. USA
And ew J G por Lt. USN
E gene F Ham 1 t.Lt. USAF
Harwin M H Lt. USN
God ey S. Hube Lt. USN
R chard R L p by 1 t.Lt. USAF
R chard R L p by 1 t.Lt. USAF
Calman L b Lt. USAF

William W Math 1 tLt USAF Dall s H Matkin, 1st Lt. USAF Fra c E McGuir Lt. USN All a E McM ha l Lt. USN John A. Moody Lt. USN Ralph P k e L. USN Lucie E Puckett Lt USN John P Quan Lt. USN J seph F Ram y Lt US Brum G Sall 1 t Lt USAF Edwin F Sobol 1 t Lt USAF Hul tt D Sumi n, 1 t Lt USAF Russell J Thoma 1st Lt. USAF Edga G W 88 ner Lt. USN Raymond A W ge Lt USV B mard M. W in tein 1st Lt USAF

Nurse Corps

Lucy B Bar 1 t Lt. USAF N II C. Bor o I t Lt. USAF FI ; an H. B wa, C pt. USAF j ha na E Buchal 1 tLt. USAF Anna M Bur Lt USN Adl D C 1 wcz, 1 tLt USAF Ro M. Cl men Lt USV The dor M. Cop 1 tLt USAF H in T Damel 1 tLt USAF P t ta A. Dully 1 tlt. USAF Ludean k Es 1 t Lt USAF Anna M E sowick I tLt USAF G ce O F h, Lt USN Pearl Y G pe Lt USN Mary B G d sk I tLt. USAF Golda D. G er Lt. USN De A.G. iff th, 1 Lt. USAF Annabell M. Grywal ki Ist Lt USAF HlaG mrot Ist Lt USAF Audrey C Hal y 1 tLt USAF R g na R H k, 1 t Lt USAF Ma alyn Hunt, I t Lt. USAF Jea n T Hyd C pt USAF Roberta T M Juli 1 t Lt. USAF Alm V K lly I : Lt USAF Datey L L ablord, 1st Lt. USAF Th tes C. Le ard 1 tLt USAF
Arl F L 1 tLt USAF Dolore M. Mark ky Lt. USN

Dorthy A M yak It Lt USAF M yde M. McConk y Capt USAF F nce S M Co d M 1 USA J E. M Donald, 1st Lt. USAF B tty E M s m th M J USA G G W 1 t Lt. USAF B bar Moulden, 1st Lt. USAF Mariann R M gl a, 1st Lt USAF Dor M Munson Capt USAF Ha IS N hol May USA Marcin A B P tr ult M j USA L urin R Pk 1st Lt USAF Mary M. Pre ton, Maj USA Hlea E Pugly M; USA Norm A R ys 1 t Lt. USA Amanda E. Schuchmann M 1 USA El zabeth F Sed M ; USA Mildred M Smith, Lt. USN V ian E. Smith, Lt. USN Conn Snap Mai USA R th M Steenburgh M 1 USA K trine F St Mai USA Lo M. Thomas Capt. USAF Mary A To n C pt USAF Margar t D Wall May USA Rebe ca W bber M / USA Margaret H. Wh el Maj USA Elizabeth A Wilde M 1 USA Martha J Y nc y M ; USA

NEW CHIEF OF ARMY NURSE CORPS

Lieutenant Colonel Inez Havnes h s been named Chief of the Army Nurse Corp t succeed Colonel Ruby F Bry nt whose 4 year statut ry term as Ch. fexp res 30 September



The rink of Col el will be given the new chief on 1 Oct ber when she w ll be sw in in with appropriate cer monies in the office of Major Gen eral Sil s B H ys Surg on Gen ral of the Army Until that date Colon I Havne will serve a Deputy Ch f of the A my Nutse Corp f Il no the vacancy caused by the retirem t of Li utenant Colonel Rosali D Colhoun.

Colonel Haynes entered on acts e duty at Fort Sam Houst 1 December 1933 She has had overseas service in the Philippine Is land the P cific Theater and in Europe Her last duty assignment before coming to Wa hington was t the Unive sity of Minnesota, fr m which she wa graduated a June 1955 with a B S degree in nursing ducation

ITEMS OF HISTORICAL INTEREST WANTED

Any ne have g milit ry medic 1 tems of equipme t photo paint nes of a hist rical n ture ar requested to loan or donate those stems to the Army M dical Museum B k Army ked cal Center Fort Sam H uston Tex For further inferm tion and shipping instriction write the Med cal Field Service School Fort S m Museum Off c Houston Tex Loaned or don ted property will bear the name of the con ignor when the item s on display

Reviews of Recent Books

HANDBOOK OF RADIOLOGY edited by Russell H Morgan M D and Kenneth E Corigan Ph D 518 pages illustrated The Year Book Publishers Inc Chicago III 1955 Price \$10

Next to retaining within one s mind a vast store of useful and essential data the easy accessibility in a handbook to such information is most desirable

This book is intended for use by all workers in the field of ionizing radiations clinical experimental and industrial It is a compilation of quantitative data assembled in six sections and four appendixes and presented generally in tabular and condensed form. The first section includes numerous definitions of physical terms and units and conversion tables of physical factors. The definitions are concise but have sufficient clarity for an adequate understanding of each term.

The remaining five sections concern general physical information radiotherapeutic data including depth dose tables and radium dosumetry radioisotopes radiography and fluoroscopy and radiation protection. The four appendixes list drugs commonly used in radiology mathematical tables the Greek alphaber and diagrams of x ray generators and particle accelerators.

It is apparent that future editions will be necessary to keep pace with the expanding knowledge in radiology. Questions might then arise as to what might be included or omitted in order to keep the size of the book within reasonable limits. I believe that mathematical tables are readily available in many forms and might well be considered as super fluous. Similarly roentgenographic technic is covered rather sketchily as compared to the standard texts on this subject and could be deleted particularly because individualized technics are used in most radiological departments.

Nevertheless these criticisms do not detract from the value of the book. Those for whom the work is intended will doubtless have numer ous occasions to refer to it —HARRY L. BERMAN Col. MC. USA

THE TUBERCLE BACILLUS in the Pulmonary Lesion of Man by Georges Ca etts, M. D 226 p.ges illustrated Springer Publishing Co. Inc. N w York N Y 1955 Pric. 48 50

The title of this book could lead to the belief that it is best suited to the needs of the pathologist and the bacteriologist. It is however as important for the practicing physician as it is a reference source for the laboratory scientist and the student of tuberculosis. In this study many of the complex and dynamic phenomena of host reaction in tuber.

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culosis to aggre si e (parasitic) f toes di cussed in det il are applicable to and illustr tve of infectious d seases in general and the book provides magnificent and fascinating deta l of the natural history of the disease proc ss in experimental animal and human beings. This latter achievement is of paramount impo tance for the physician sopportunity to improve his insight into and understanding and management of clincil problems is eq. Illy determined throgh the study of a disease process in gre t det il as in the experience gained through treating large numbers of patients.

The org nization of content is excellent and pro ides the potential of a solid educational experience. In the beginning is a b sic re lew of the hit tology of the various kinds of lesions in pulmonary tuberculosis. Next the author presents the biciliary character sites of the elesions in man in experimental ain miles. These aspects a either integrited into the histobacteriologic point of view to provide a means for evaluating concepts of immunity and allergy. Then follows an exciting and ruly stimuliting conclusion as to how the histobacteriologic features of the lesions enter into the uccesses and failures of treatment and how this basic information may be used to predict trends expectations and problem in the future. The bibliography i entirely satisfactory. There are meny tiss e sections for illustration between the dadvantages of poor contrast and reality mages; in herein in black and white sections as over and ageinst the vit lity and descriptiveness of color.

The book is based on the author's experience with autopsies of 1500 patients who died with tuberculos ovia vaye period. He corre I ted all hi findings ta topy with the clinical and adiologic records of each patient. In this way he provides for the first time in English a detailed study of the hist better ologic feitures of pulmonary tuberculo is in man—JAMES C SYMER C pt. MC USA

HANDBOOK OF TREATMENT by H ld Th ma Hyma M D 511 page J B Lipp ort C Ph ladelphia P 1955 P \$8

In this handbook Doctor Hyman has compil dia readily accessible prictic lind sensible appoach to modern therapy. He has in nged disease intitle this more mpirtantic linical symptoms such a dispense and edema indiction the major drugs or diugical es such as antibiotics and diuretics in liphabitical siquence. The addition of many well arranged table. It afford much convenience to the reader and in perhaps the most valuable of ture of the book.

There is p b bly n thing o maddening sitying to keep a textbook up to date with d nee in the them and this book tho gh saued in 1955 has no comment on met cort ndac netacort ndralone cycloser ne the ersenes the n w antipolio immunization myl ran insulin le te and other. Although the auth has end ed to eliminate outmoded preparations h sill has are in d to many of them.

There are a few errors, but the most serious criticism concerns the lack of a section on acure poisonings and other emergencies such as asphyxiation and drowning. The early management of burns should have been included because it deservedly belongs to the internist and general physician.

Doctor Hyman is to be commended for such an excellent book. Fre quent revisions will be required to keep it as current as other texts devoted to therapeutics.—JULIAN LOVE Capt. (MC) USN

REGIONAL ENTERITIS by Fed rick F Boyce M D 84 pages illustrated J B Lippincott Co Philadelphia Pa 1955 Price \$2.35

This pocket sized monograph presents material previously published in the American Practitioner and Digest of Treatment for September 1954. In an interpretation of the author's experience with regional enter title he stresses the importance of the disease and gives his personal experiences and a review of the recent literature.

The increased incidence of regional enteritis the wide range of its clinical manifestations and the discouraging therapeutic results with both medical and surgical management are ably discussed. Etiologic considerations the pathologic process and the anatomic distribution of the disease are presented. An effort is made to correlate pathologic and clinical manifestations and to stress the diffuse nature of the disease. The clinical and diagnostic problems encountered are discussed briefly clearly and to the point Seven case histories are presented to illustrate all the points made. The section on therapeutics is complete from the viewpoint of the internist and the surgeon. The problem of recurrence in the adult and the nonrecurring nature of the disease in children is considered.

This monograph is recommended as an excellent reference for the medical student the general practitioner and the specialist

-HILLIAM STEIN LE COL MC USA

EARLY CARE OF ACUTE SOFT TISSUE INJURIES Committee on Trustal lat edition. 192 pages American College of Surgeons Chicago III

Thi manual is a guide for the early creatment of traumatic lesions exclusive of fractures. It is particularly valuable as an objective standard of surgical practice in the treatment of traumatic lesions. The effort by the Committee on Trauma of the American College of Surgeons to formulate such a standard is highly commendable and important in view of the present would simustion the possibility of renewed conflict and also the great accident toll in this country.

The subject naterial of the manual is presented in a series of chapters on the general punciples of wound care first and physical examinations and regional problems of the neck, head space face abdomen, thorax et cetera. A rather extensive coverage is made of each region and compartment of the human body. Pums amputations hand injuries

that smoking pl ys s me r le in the et ology of lung cancer. For these reasons he considers s sound Docto Ochsner s advice that man would profit were he to refrain from the use of tob cco in any form it wever the subject of the cause of lung cancer (or of ny c ncer) s so complex th the cannot accept as a fact the statement that cigarettes cause c ncer

The book is recommended reading for all who are intrested in the subject of lung cancer. And who isn to

-CLIFFORD F STOREY Capt (MC) USN

CARE OF LABORATORY ANIMALS, A mull ppd by the Sbmm.tt
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mtte R h dSddd66pg ll t dpp
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N Y 1954 P \$1075

This mouls nattempt to fulfill a need for a simplified guide to the proper care of labotory an mals. It is writen largely in outline for and pole ets a concise summer ty of the information which those charged with the routeet rend man gement of laboratry an mais need Nottempt to present detailed planations of these procedures smad

The exclusion of certain background material such a the principles of antito in trition and housing may be question of This formst in presented hower will be of consisted by lie to animal caretaker when supplement d by explaintions of the basic priciples is volled Informit in spresented on mice in the guine pigs rabbit himstes contor at a retisional solg monkeys heep and go its discontinuous of the sold properties and participles and properties and participles. The sold properties are sold as the properties of the sold properties and participles and properties and participles.

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-ROBERT D. HENTHORNE, Capt NC USA

GOOD GENERAL PRACTICE A R por f Surv y by St ph T ylor M D
M R C P 604 page 11 tra d O f d U ty Pe N w Y k
N Y 1954 Pr 33 50

This study of the dally pofession I routine and working art agreements of nearly 1000 or tranding Bitish gieral practitioners was spons ared by the Nuffield Pro net I Ho pital. Trust as means of providing suggestions from young the stand ids of general practic. P vious reports which creditather striling conditions among general proctitioners tithe I would not be the profession I scale indicate the need for study of this type.

For periods of one to five days the author visited selected practitioners studying all phases of their working conditions and accompanying them on calls and office visits. In analyzing his material he makes very little use of the various adjuncts of the statistical method but presents instead a remarkably clear and frank discussion of high grade general practitioners functioning under the National Health Service Act. The author draws on earlier reports for examples of poor practice and describes in detail practical means for advancing toward the level of the best practitioners. The writing is warm friendly tinged with humor almost chatty at times and never stilted or contrived. This is an extremely frank and revealing book.

As he presents detailed practical suggestions for improving the standards of medical care the author gives us an intimate view of the best and worst of general practice in England

A sidelight on the paper work situation is seen in the corset cer tificate which brings the doctor irritation and a fee equivalent to 28 cents. Another interesting certificate covers pregnancy milk eggs soap and other unspecified commodities.

While the book is intended primarily for general practitioners in Great Britain it is of unusual interest to the medical profession in this country. The open unreserved treatment of a subject with such controversial implications makes fascinating reading for all concerned with medical care whether friends or foes of the concept of socialized medicine—ROBERT L. WARP Capt (MC) USN

THE LUNG by Juliu II Comoe fr M D Robrit F Foster II M D Athur B. Dubois M D William A Briscoe M D and Elzabeth Calen, A B 219 pages ill strated The Year Book P blishers Inc Chicago III 1955 Price \$5 0

In their preface the authors state they are writing for doctors and medical students to explain in simple words and by means of diagrams those aspects of pulmonary physiology that are important in clinical medicine

The book is very well illustrated by means of diagrams and chatter. The presentation is orderly and logical. The various chapters tent of basic information on lung volume pulmenary ventilation, circulation and ventilation blood flow tatios diffusion of pases, and mechanics of breathing.

Although the vital information is succinct its presentation assumes that many doctors and next medical students are expert in thy ical chemistry mathematics, and disprammation Decause this reviewer can not claim distinctor in any of the three fields he found the reading difficultiant control erasin distinctors.

Physiclepic tenta it liente enty hew diaman han altered function. Thus tulic e ef faction atulien earlier tell vierness but the legion in er if it denie a t interfere with the faction of the hope even if a

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lesion exists. Hence, such studies can never replace a careful history thorough physical exam nation and radiologic bacteriologic bronchoscop c or pathologic investigation

It is quest onable whether pulmonary function tests pe s because of their complexity are comparable in clinical applicability to tests of h patic ren l cardi vascular and n romuscular functions The monograph is well d pted for the graduate stude t in physiology but fails to clarify the capsular comprehension of the calcified clinician -CHRISTOPHED C SHAW COM (MC) HEN

SEGMENTAL ANATOMY OF THE LUNGS by Edward A Boyd n, Ph D
276 pag II d Th Blak t D M Graw H II B k C
I N w Y k N Y 1955 P \$15

This compt hensiv and well llu trated anatomic text deal no with the most infinite ind moute ditails of the egmental bronchi and re-I ted pulmonary essels will erve s a v lu ble reference for the the acic surgeon brenchescopist roentge log t patholog st pul monary phy olog t and any physic a interested in the clinical problems pertar r g to pulmon ri dis ases

The first chipte dipicts in it esting historical review of the e olution of gro s an tom c c ncepts and k owledge d a ed from c n turie of study and nyestigations directed tithe himan bronchopulmon ary tree The at eight chipters nalyze th pr v il ng gro truc tur l p tt r s of the segmental a d ubs gm tal bronch al and v sc Ir d stributions Descriptiv ketch llust ation in contra t colors are used to portry a tomic territories of such nitomic nits a v ewed fr m all pleural surf ces and a gle. The basic term nol gy dev sed by Jackson and H ber ge rally accepted a ternat onally has been follow d by the uth r some c pt ons nd ddition I an tomic descriptive terminology b sed on location of peripheral an tomic structures has of necessity due to det iled min te anatomic mappings been introd ced

The ninth chapter concerns the st ge developm t f th human lungs a d summarizes the present concepts pertaining to ome of the gross congenital anomalies. This chipter is thor ughly a teresting and provoc t ve and is offe ed as an excell nt clin cal reference

The tenth and last chapter s br ef nd is actually a introducto y levend for the la t 12 color plates (each having a sep r te legend) which depicts the complete n tomy of two sets f norm l h man lungs yet one pair p s nts 24 bronch al or ascular devi tions from what the a thor ha stati t cally e t bl shed s prevailing natomic pattern The second p ir of 1 ngs co ta ns 23 mi or devi tions from prevaling patte

The author realized early in this investigati anatomic study that th pulmon ry segments presented se mingly ndle s va iati s in th arr gem nt of parts yet he h s fter nine yea of intensi dissec

tion and study been able to establish empirical prevailing patterns which tend to somewhat simplify the most difficult of all gross and tongs structures.

This text is recommended as a valuable reference for all students instructors and clinicians interested in pulmonary ploblems and will no doubt become part of all professional libraries at home and abroad — JOHN M. SALYER COL W. USA.

SPORTS INJURIES Prevention and Active Treatment, by Christopher Woodard
2d edition 128 pages illustrated Published by Max Partish & Co
Ltd London wl. D stributed by Tack & Field New Los Altos Calif
1946. Prcc \$3

This small volume was written for the guidance of trainers coaches masseurs and physiocherapists. It is an impassioned plea for the active treatment of injuries sustained while engaged in sports which the author states will bring far better end results in 99 cases out of 100 than will the traditional conservative treatment by a nonspecialist in this field. Active treatment is defined as avoiding splinting heat, or massage and instituting stretching and exercise early. Considerable stress is placed on preconditioning for prevention of such injuries but many of the ideas are expressed in archaic terminology as an example or liver concentrate is recommended as a panacea because it "tunes up the liver."

Much space is devoted to training technics and about half of the volume deals with definite injuries Although the author signposts the type of case which should be given expert medical attention he prescribes methods of treatment for specific diseases and injuries that are not commonly used by American surgeons. The style is informal and injuries of numerous prominent British athletes are discussed as examples in the arguments presented. This volume has value to surgeons only for information as to the type of treatment trainers and coaches use on their athletes unless closely supervised.

-IOHN H SPILLAINE LI COL NC USA

DRUGS IN CURRENT USE 1955 ed ted by Walte Modell M D 148 pages dictionary style Springe Publi hing Co Inc N w York N Y 1955 Price 12

This little soft-cover book is an alphabetical listing of the more commonly used drugs. The principal pharmacologic characteristics properties actions dosage et cetera are tersely mentioned. It is said to be "reliable as the best hospital formulary anywhere and comprehensive enough to be universally useful.

Unfortunately its shortcomings would seem to limit its usefulness A number of clearly obsolete or unimportant drugs are mentioned e g tosemary oil and persic oil Checking on benadryl one is referred to dishenhydramine U S P From there one is told to see antihistamine drugs Certainly there seems to be an unnecessary step involved Other criticisms could be noted The dosage schedule of penicillin

1552

is grossly inadequate. Some drugs g INH are not listed when one finds the class to which they belong although they may appear under their brand name. The moifacturer is not listed of the physician has no way of checking on this poir. Certain proprietary prepar tions are omitted from lists of similar drugs.

The bas s f r the descriptions are the U S Pharmacopeus National Formulary New and Nonofficial Remedies Moder D ug Encyclopedia and imilar sources Little seems to be gained in this condensation of that material Furthermore the Physicia s Desk Reference would appear to be more helpful — SO BMFE LI (MC) USA.

BASIC SCIENCES IN ANESTHESIOLOGY (A Go d for Study), by Arth B T rrow M D M S 2d d 274 rag Th Lyd tt P bl h g Co. Sa Ant T 1955 P \$5

This man al was prepared as a guide to a sist members of the m dical profe s on in preparing for the examinations if the American Board of A sthesiology It is not designed to ubstitute for comprehensive reding bits noutlin fir tudy accompanied by copion in ferences

Quest ons from written examinations given in pre 10 s years are an wired and the specific reference give. Most discussions are bstract difform their ference. The five apparent errors are those in which only one viewpoint of controversial question. The ented

In additing to quit ons and an wis with eferences there is a liter of recommended books for a personal basic library fir the picualist in nesthesiology. The manual is paper boild with loose leaf type pages on plastic ings. The rivewer considers the price well spent fithe mail is used in the man er and for the purpose for which it is designed.—PHOWARD K PEDIGO LICI. MG. USA.

CLUES IN THE DIAGNOSIS AND TREATURINT OF HEART DISEASE by P I D Whi M D Am L tur Sc P P I I I N M D 242 A M g ph Th B t D f Am L tur Curcula Ed diby from et P g M D d A C C un, M D 186 pag II tr d Ch I C Th ma P bl h Sp gf Id III 1975 P 25 50

This book h be nt to its purpose nd tile. In it the author pret is in bref and comp cit style those featur's featurouscul reamn nt on nd treatment which h has fond to b of practical addecise le le T h ical and elabor to method of study sch s crd c cath te izat ad ng or rdiography are nt d scus ed be cause it the uthor it nt to emphasize the important feature of method of e m tona l ble to the majitry of proticing hysicias y Nithum tetentio i giv to the mport nt cl sto be found or seitched for in the patient's history. Phy ical signs roentgenology and electrical ogr phy are dicuss d less fully. The index 3 speror Althugh the book s not complete text on cardiology and does not petend to be ts nexcellent book for the med cal student and of interests to the card of est — Trunks w 1/1/10/10 Le C. L. M. Clade of the contraction of the second of the contraction of the second of the cardiology and of interests to the card of est — Trunks w 1/1/10/10 Le C. L. M. Clade of the cardiology second of the cardiology and so the cardiology and so the cardiology and contraction of the cardiology and cardiology and contraction of the cardiology and contraction of the cardiology and contraction of

THE HISTORY AND CONQUEST OF COMMON DISEASES edited by Walt r
R Bett 334 pages The University of Oklahoma Press Norman Okla
1954 Price 34

The preface of this collection of 17 articles by prominent British and American physicians states it is intended mainly for patients but also for the medical profession. Among the subjects discussed are acute communicable diseases influenza pneumonia rheumatism arthritis heart disease venereal diseases tonsillitis and adenoiditis appendictits epilepsy and cancer.

Most of the articles describe the status of knowledge on the subject in the ancient cultures that flourished around the eastern end of the Mediterranean in the pre-Christian eras. The growth of this knowledge or the variations in misbelief as is often the case are then traced to modern times. The book emphasises the fact that the great bulk of existing medical knowledge is less than a century old. Some of the articles devote much space to the unenlightened gropings of the an cients and too little to the scientific developments of recent times.

Because the book is intended for both patients and physicians it does not well fit either. It is too thin for the physician and it presumes a degree of erudition which the average American reader does not have. In spite of a five page glossary of medical terms, it still contains many unfamiliar words and phrases. About a tenth of the pages are devoted to references and suggestions for further reading. Some are in foreign languages.

By some happy fortune a chapter on malingering is included in the book. There was a little mention of it in ancient times apparently under the prevailing pagan influences there was so little sympathy for human suffering that the simulation of disease was not likely to be a profit able procedure in those times. Conversely, the spread of Christian influences with their emphasis on charity gave tise to many abuses which encouraged feigned diseases. In the middle ages children were murilated to better serve as beggars. Religious hoaxes involving stig matization and miracle cures were frequent. This probably is the best chapter in the book.—HARTHINA SCHULZE Col. USAF (NC)

SURGERY OF THE SMALL AND LARGE INTESTINE A H indbo k of Operative Surgery by Challs W Mayo W D 340 pag illustrated by Russell D ake Th Yer Book Publ hr I c Cheago III 1955 Price 39

This handbook presents concise descriptions and illustrations of the more common surgical procedures employed in treating lesions of the small and large intestine including the rectum. It is complete and thorough in describing the pre and post operative management Several pages are devoted to minute details of low residue liquid and solid diets as well as formulas for tube feeding and intravenous medications. The gross anatomy blood supply lymph drainage errors and pitfalls of each operation are covered fully in the text and by illustrations.

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The format of the book is excellent. On the left hand pages the text is presented along with a description of the illustration on the opposite pages. The means that about half the book is composed of illustrations showing step by step the operations recommended. These Illustrations are simple but excellent in that they incl de the essential features and omit the extraneous details

Many surgeons may disagree with some of the recommended oper ati ns for regional ileitis and ulcerative colitis especi lly those n which short circuiting is advocated leaving a fected disea ed feces laden loops of the time in the abdominal c vity. Also it would have been better to omit the porti n on anal diseases and leave it to another volume rather than to my to cover this large field in four pages of text and four of Ilustration The latter in this particular portion of the book tend to obscure the text instead of revealing its meaning

To the surgeon or gener I practitioner who occasionally ventur s into the field of intestinal surgery and to the resident or surgeon who w nts a quick brush up in method and technic before surgery this book is highly recommended. For these, the volume f Ifills a real need and does it well -! AWRENCE L. BEAN Cast (MC) IISN

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trated Spo d by h J h May J Fou d t N w Y k N Y
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This v I me is an authoritate e c mpil tion of the thinking of world author ties on such subjects as the function I role of the placenta sugar transport in the ungulate placent and the atomy of the pl ce tal b rr er It br ngs together the opinion of outstanding anatomi ts phy ologi ts embryolog sts pathologists obstetricians zoologists psychiatrists and oncologists I this conference report a group of discussants represe ting a wide variety of scientific specialties en de vor to obvi t the obstriction to m tual understanding which nor mally exi to between the m ny disciplines and specialties in the gen eral field of sc ence

The conference t ke the form of di cussions among the 25 par ticipants and must be re d to be apprec ted Conclusions are not drawn but the s brects of placent tion placent I physiology espe cially with respect to sugar transport in m mm is and ungul tes and the a atomy nd physiology of the placental barrier in higher mammals are thoroughly ventil ted A useful appendix contains g a classificatio of all the presently known enzyme of the human pl centa completes the work

This volume is a valuable presentation of a complicated subject di cussed from var ous scientific pproach s It should be f help to students and practitioners of medical as well as allied sc ences

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The volume desiring with gracers opto conditions is the mis and up-to-date men has seen produce remember there can are recommended they are calefully illustrated. I consider these times to be the most complete and so is is factory resurf in the Entitle language of present timestrate y and practice of the speciality.

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669 pag 1/2 strate a a 4 4/41 1 1 1 1 e & Feb cer
Philadel na F 1/2 Frue \$1

The author prime certia "tria relike", a cellal a tive one by 20 authors present the field of piliceasy dis assos from the clinical viewpoint of references of arts of fishing, and pathology of various processes have been included the entitled such presentations will enhance clinical understanding first the englishes dwells chiefly on the diagnostical tractions of the diagnostic and trea near of piliceasy diseases.

For the undert and the clinician the adjects are well covered and fulfill the cope which the editor defines for this text. The list of continuous is imposing and each chapter reflects their high quality. This volume is not so established in the subject matter so extensive as to fill the need of the physician whose primary interest is chest disease but this would not be expected from a text of 669 pages. The forest and printing are excellent the reproduction of toent genograms is good and the bibliographies at the end of each chapter appear extensive.

The author of the chapter on the shisiologic basis of pulmonary disease has been asked to do too ruch in the pages allowed him Furthermore he has chosen to continue to use terminology that re spiratory physiologists ha e largely discarded

This book fulfills the need for an inform ti e but not exhausti e te t deal ne with respiratory deases. The idea of applying the concept of a complete medical di enosis to pulmonary disease (as long adv cated by the New York Heart Association in c rdiac dis ses) i appe ling-CHARLES S CHRISTIANSON LI C 1 MC USA

KINESIOLOGY OF THE HUMAN BODY U d N m 1 d P th 1 g 1 C dt s by Ath St dl MD Eg FACS FICS (H) FRCS 708 pg 11 ttd Ch! CTh m Pblih Sp g f ld Ill 1955 P \$19.75

E rly in this vol me th author cont nds that it is po ible with reservations to alyze and calculate human in tion in the same way th t it is r ssible to analyze and calcul te the movement of mech n ical devices. The reservations required are not in his opinion of sufficient importance to vitiate the practical value of the mathematic I computations He then proceeds to a discussion f the physical properties in the normal and abn in 1 st tes of the various tissues that make p the huma locomotor sy tem and an lizes the effect of m chanical forces these tissus With this b ekground of a format on there follows a discussion of the mechanical structur of the spie and the joints of the extrem to s

The wo k well print d and bound and well illu tr ted Complete author and subject inde es enh nce its value. This vol me will find t pre t st use n t fere ce libt ries and will appeal partic larly to tho e who de i m re complete understanding of the underlyi g mechanical law which per te n producing abn imal ties of the str c ture and f ct on of the locomot r systems

-IOHN II CHEFFEY C mt (NC) USN

THE YEAR BOOK OF UROLOGY (1954 1955 Y B kS) d d by W ll = W M D Ph D 372 page litted Th Y Book Pbi b 1 Cheag III 1955 P \$6

This n ual vol me abstra ts 316 contemporary articles from the feld of urology accompa ed by spa se illustration. Many betracts are accomp ed by comments by the editor. These sometimes so m arbit ary but are upported by references to other articles past and pr sent. The subject m tte s div ded anatomically and there re separate a thor and s bject nd es

Although this is the best compil tion of current urolog c writing ava lable t u t s unfortu te that there appears to be some b as in the select on of public tions to be review die g some 22 art cl s are abstr cted fr m the Scand na ian but none from the Sp nish Itali n or German fields. No references were noted to the Bitish Jo mal of U logy The form t and ucc not re sewing r xcellent

-CHARLES # HOFFMAN I LICL W USA

New Books Received

Books received by the U.S. A med Fo ces Medical Journal are acknowledged in this department. Those of greatest inter st will be selected for review in a later issue

- THE POSTURAL COMPLEX Ob ervations as to Cause Diagnosi and T eat ment by Lauence Jones M D 156 pages illustrated Charles C Thomas Publisher Springfield III 1955 Pice \$9 75
- MODERN TRENDS IN PSYCHOSOMATIC MEDICINE edited by Desmond O N II 375 pag s Paul B Hoebe Inc New York N Y 1955 Pri e \$10 50
- ROENTGEN INTERPRETATION by George W Holm s M D and Laurence L R bbins M D 8th edit on 525 pages 371 illustrations Lea & Febige Philadelphia Pa 1955 Price \$10
- ORAL AND DENTAL DIAGNOSIS With Sugge tions for Tre tment by Lutt H
 Thoma D W D F D S R C S E g Hon F D S R C S Edin
 and Hamilton B G Rob nson D D S N S 4th ed t on 449 pag s
 928 illustration 55 n colo W B Saund rs Co Philadelphia Pa
 1955
- COUNSELING IN MEDICAL GENETICS by Sheldon C Re d 268 pages W B Saund s Co Philadelphi Pa 1955
- THE JOSIAH MACY JR FOUNDATION 1930-1955 A Rev w of Activit es 174 pages Th Jos ab Macy J Foundat n New York N Y 1955
- SYSTEMIC LUPUS ERYTHEMATOSUS Review of th L terature and Clinical Analys of 138 Cases by A McGebee Harvey M D Lawrence E Shulman M D Philip A Tumulty M D C Locka d Conl y M D and Edyth H Schoem ch M D 437 pages illu trated The Williams & Wilkins Co Baltimore Md 1955 P ce 53
- EXPERIMENTAL PSYCHOLOGY A Series of Broadc t Talks on R cent Re search by A J Watson, Harry Kay J A. D utsch B S Fa ell Michal A gyle and R. C. Oldjuld Edued by B A Farrell 66 page Philo sophical Library New York N Y 1955 Price \$275
- THE BODY FLUIDS Basic Physiology and Practical Therapeutics by J Russ Il Elke ton M D and T S Danowsk M D 626 pages illu tated W lli ms & W lkins Co Balt mor Md 1955 Price \$10
- ANNALS OF THE NEW YORK ACADEMY OF SCIENCES Volume 63 Art 1 pg 1 144 July 15 1955 Ed to Roy Waldo Mee The Regulat on of It ng a d Appet t Conf e c Chauman and C sulti 8 Edutor F ankl n Holla d 143 pg llustrat d The New York A ad my f Sc nce N w York N Y 1955 ptc \$3
- ANNALS OF THE NEW YORK ACADEMY OF SCIENCES Volume 61 At 3 page 637736 July 8 1955 Ed tor Roy Waldo M n B ofla onoid and the Cap llay Conf en e Co-Ch men Gestau J Marn and Alb 1 S 1 Gyo gyl Co ult 3 Ed tor Gustau J Marn 98 page 1 llut t d The New York A ad my of S ces N w York N Y

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- DIFFERENTIAL DIAGNOSIS OF LEUKOPLAKIA LEUNO, ERATOSIS AND CANCER IN THE MOUTH by Ab t. L. 8 i.b. M. S. M. D. Ame L eur S. P. bl. t. N. mb. 267 A. M. gr. ph. Am. Le eur S. D. m. l. gy ed t. d by A t.b. C. Cort. N. D. 62 p. G. l. C. Th. m. P. bl. h. Spr. gf. id. III. 1955. P. \$25.00
- SEXUAL PRECOCITY by H gb J Hy M A M D (Camb) M R C P Am L t Se P bl N mbe 200 A M g ph Th Ban on D f Ame L ur Endec 1 gy Ed d by W H d O Tomp, M D 276 pag 11 d Ch 1 C Th P bl Springf ld III 1955 P \$675
- SURGERY OF THE STOMACH AND DUODENUM A Handbook of Ope t S g y by Clud E H lb M D D Sc (h) Ill tred by M n l M L lb M ll 2d d d 370 pg ll t d Th Y ar B k P bl h l Ch g lll 1955 P \$9
- NEUROGLIA 44 sphlgy nd Funct by P l Gl M A Ph D M D
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INSTRUCTIONS FOR AUTHORS

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An original typewritten copy of each manuscript with wide margins on unruled paper size 8 by 10½ mehes must be submitted. Carbon copies are not acceptable. All written matter including references must be double-spaced. Articles are accepted with the understanding that they are submitted solely to this Journal and that they will not be reprinted without the permission of the editor. A brief factual summary which is complete in itself should conclude each paper. The editors reserve the privilege of editorial modification. The senior author will be furnished with a carbon copy proof of his article prior to publication. Authors alone are responsible for the accuracy of their statements.

REFERENCES

References to published literature should be listed at the end of the article in the numerical order in which they are cited in the author's text Care and accuracy in their preparation will expedite publication of the article Following are correct examples of references

Fleming A Young M 1 Suchet J and Rowe A J E Penicillin content of blood serum after various doses of penicillin by various routes Lancet 2 621-624 Nov 11 1944

Cabot R C Permicious and secondary anemia chlorosis and leukemia In Osler W (editor) Vodern Ved cine 3d edition I ea & Febiger Philadelphia Pa 1997 Vol 5 pp 33-100

FIGURES AND TABLES

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UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON 1955

Monthly Message

This is the first of two messages based upon an address given by President \ Whitney Criswold of \ale on the practical value of a liberal education at the Cum Laude Convocation at Phillips Fyoter \cademy in Fobruary 1954

At the present we have a total school population of about 39 million this is expected to reach 44 million by 196. Today our college enrollment is approximately 2 million and the colleges are faced vith the problem of a considerable enlargement within the next ten years yet we are faced with a prowing shortage of teachers Tre actual number of teachers trained for elementary and secondary school work has been declining over the past three or four years with a further decline in view. Today our secondary education particularly in the public school system tends toward courses of vocational and life adjustment rather than those which comprise a liberal education. In example is cited of an applicant to the freshman class from a hi_h school in a large Midwestern city His courses for the junior year were English III American History Typing Speech Chorus Although his record was good and he lad stron, backin, needless to say he was not admitted to Yale

Again there is the story of the French teacler in a public secondary school in an Fastern state who stated that she had jut been called before the principal and confronted with a letter from the Superintendent of Schools which said

Your French students have been doing better than the national average. This is not a good thing. Let us slow up

To criticize students for doing better than the national average is a symptom of ill health and confusion of values undermining our whole structure of American education

Why are such things as automobile driving band music chorus et cetera equated with English History and Mathematics? Why are tie basic subjects being sacrificed?

FRANK B BFRRY M D
A 1st t S cr tary of Defense
(H alth nd Medical)

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Foreword

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FRANK B BERRY M D
A t t S tary | D | (H lth d M d l).

MAJOR GENERAL SILAS B HAYS Surgeo G I U i d Si i Army

REAR ADMIRAL BARTHOLOMEN W HOGAN
Surg Gen ! U t d St t N y

MAJOR GENERAL DANC OGLE
S g G l U t d Si t A F

United States Armed Forces Medical Journal

Volume VI

December 1955

Number 12

A STUDY OF HIATAL HERNIAS, USING PNEUMOPERITONEUM

WILBUR C BERRY Colonel MC USA
JOHN P HOLBROOK Capta n USAF (MC)
EDWAPD A LANGDON Major MC USA
CARLETON W MATHEWSON M D

A CCURATELY evaluating upper abdominal symptoms when there is radiologic evidence of a diaphragmatic hermin, is a perplexing clinical problem. For several years after the advent of modern surgical technic, hintal hernias were repaired in large numbers, frequently with no clinical improvement. This caused surgical repair to fall into some disrepute, with a number of clinicians and radiologists stating that radiologic evidence of a hinture hernia was of no clinical significance in most cases.

During the past few years there has been a reawakening of interest in the problem. It is becoming clear that many persons have suffered from this condition living for years on ulcer diets or being considered essentially an emotional problem, after repeated studies reverled no organic lesion other than a hiatus herina of the concept that if most hiatus herinas observed roent genographically are asymptomatic all are asymptomatic is not necessarily true. It is highly probable that a number of hiatus herinas do produce symptoms which frequently may be very distressing. The clinician must decide if the patient's complaints are due to a hiatus herina diagnosed by roentgenography or to some other cause.

Symptoms due to an esophageal hiatus hernia frequently mimic those of a wide viriety of upper abdominal and chest diseases! Methods to relieve the symptoms of hiatus hernia have been near Is as discretified as the symptoms themselves. The use of diets, antispasmodies, antacids and special sleeping arrangements have all given from fair to poor results in general. The most successful method is surgical repair of the hernia but the physician is hesitant to recommend this uncomfortable, slightly

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etion

barardous form of therapy unless he is reasonably confident that the operation will relieve the symptoms At this hospital a group has been investigating a procedure which may enable a physician to more accurately ascertain if the presenting symptons are due to an escapareal highes bernia. I neumoperitonoum a ocen used in approaching this problem patients whose elected after careful clinical and rocateonographic evaluation The purpo e of this study was to test the effect of pneumoners toneum in nationts in whom the clinical diagnosis was relatively vell e table hed if intra abdominal air produce I relief in a high percent of elected patients ith symptomatic highes hernia it vould be useful a supporting evidence in cases in which a & finite common could not be arrived at on other grounds

Candillates for this study vere questioned as to type of symp tion intensity and related conditions Particular s paid to recumbent pain and mourestation. Previous me ti any such as diet drugs and other methods to control evaluated These patients vere then examined with optagoscope for esophagitis and herniated gastric mucosa to oh erve the action of the cardia. In patients with sus t d hiatus fernia careful roent enographic examination of e upper gastrointestinal tract vas carried out to establish the diagnosis and to rule out the pre ence of other organic disease During fluoroscopy several maneuvers were used to distinguish the type of herniation if one was found Esophago-astric junction was of served in the upright position and in the supine and prone Trendelenburg while the patient was drinking barium water mix ture. Increa ed intra abdominal pres ure was used to determine the pre ence of regurnitation. This finding as ob erved in the majority of those patients complaining of symptoms attributed to an e ophageal hintus hernia Fsophagorams were obtained on all patients and an attempt was made to evaluate the distal end of the esophagus the type of herniation and the presence or absence of peptic esophagitis Identical procedures were carried out on each patient following pneumoperitoneum and the examination was repeated after surgical repair of the herni

The preparation of the patients selected for pneumoperatoneum was extremely important. Fach patient was informed as to the symptor if any which might be produced by the air and asked to differentiate them from his previous complaints. Pneumoperitomum was begun to injectin, about 300 cc of air under pre sure ranging from to 40 cm of water into the abdominal cavity by reans of an areroid preumo apparatus. Forty eight hours later a larger amount of air va injected in a irular manner the average volume being between 00 and 600 cc. The precise amount of air injected on each occasion depended partly on the musculature of the abdomen, degree of relaxation, and discomfort produced Forty eight hours following the second injection, between 750 and 1,000 cc of air was given intra abdominally, making a total of between 1 500 and 2,000 cc of air over a 4 day period At this point the ratient was asked to begin recording any changes in his symptoms At three 5 day intervals thereafter about 750 cc of air was injected in order to maintain an average pressure in the abdomen of about 10 cm of water During the 2 week period following the initial three injections of air, the patient's symptomatolo v was evaluated The patient's hiatus herma was then surgically repaired These patients were observed post operatively for from 3 months to 1 year. In the 10 patients who have been studied to date symptoms were improved with pneuro-peritoneum in 9, in 4 the response was very dramatic. The procedure was not tolerated in the tenth patient All 10 patients showed postoperative clinical improvement which closely correlated with the degree of improvement gained by the pneuro-peritoneum Three typical cases are described

CASE REPORTS

- Case 1 A 37 year old man had moderately severe recumbent distress unaffected by diet or drug except that spicy foods exaggerated his symptoms A rather large esophageal hiatus herina was noted by roent genography Esophagoscopic examination showed a moderate esophagitis Over a 3 weel period the patient was given 3 000 cc of air intra abdominally which gave complete relief. He was then operated on and during a 6-month postoperative follow up he has remained asymptomatic
- Case 2 A 55 year old man entered the hospital complaining of burning epigastric pain occurring postprandially and at night. He obtained moderate tellef by assuming an upright position and walking about. The patient had a myocardial infarction several years previously, and continued to suffer from angina pectoris. Over a 15 day period 2 300 cc of air were injected into the patient's abdomen. During this procedure the patient continued to have exertional angina, but noted disappear ance of postprandial and night epigastric burning pain. Operation was performed, and the results in the 8 postoperative months have been good.
- Case 3 A 28 year-old man suffered severe postprandial distress and had lived for 18 months almost entirely on rilk. Repeated thorough evaluations of the patient supper abdoren and chest revealed only a hiatus hernia. The patient had been considered a psychoneurotic prior to this study. Over a 3 weel period 3 000 cc of air were injected into the abdomen producing complete relief of his symptoms. Physical results were also excellent and there has been no recurrence of symptoms a year postoperatively.

The mechanism by which relief is obtained is not entirely clear. We believe that pneunoperitoneum reduces the hintus hernin a sufficient number of hours during the day to allow irritation and pressure to subside so that considerable if not com-



Figur 1 A lul g bits he sa waltad pror i pine mopa

plete relief is obtained Repeated coentgenograms showed that while sufficient air wa pres in under the disphragm the stomach did not protruce through the hinter while the patient was in the upright position (figs. 1 through 4). In a number of patients in



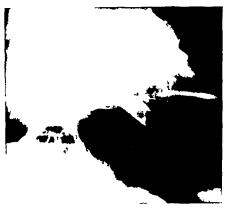
Figure 2 Roomigenoram of same patient as in figure 1 showing eduction of the hutus he niz w th pneumoperitoneum.



F rure 3 A slid mg t pe of histure bernist cisualized pr or to pneumope stone m.

the Trendelenburk position the storach herniated through the draphragm just as was observed before the injection of air

In conclusion it is believed that this method simulates re duction of the hernia anticipated by surgical repair, and that



Figur 4 R d t / lul g type hat he ut i the profit post with pur mope on in The me like I p isualized is pla d tile gattic jact dur g ad

it might veil be a useful technic for selecting patients v ho will benefit from surgical intervention

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EXPERIENCES WITH THE ACUTE PHASE OF POLIOMYELITIS

A Clinical Study of 118 Cases

PAUL W SHEFFLEP Captain MC USA

NE HUNDRED AND EIGHTEEN patients (service personnel and their dependents) with policonvelitis were admitted to this hospital during the period from December 1953 through November 1954 A clinical analysis of the cases and an evaluation of the results of therapy in the 1953 1954 policon ryelitis epiderine in the Territory of Hawaii are presented here. The classification used here is a modification of that of Grulee' and Spith and associates 3 The frequency of these cases by type of policonvelities is shown in table 1

TABLE 1 Frequency of the different forms of pol myelts

Type	Number of cases	Percent	
onparalytic Encephalitic Bulbar Sp mal	39 5 21 53	33 1 4 3 17.8 44 8	
Total	118	100 0	

CLINICAL FEATURES

S grs and symptoms All patients admitted in the acute phase of the dilease had fever. The six predominant complaints listed in order of frequency, were headache, fever, muscle screness muscle weakness symptoms of upper respiratory infection, and russes and womiting. Muscle weakness and/or muscle screness occurred in 90 percent of the patients at some time during the acute phise of the illness. Uninary retention was present in 14 patients on admission. The duration of symptoms prior to hos pital admission is summarized in tuble 2. About one half the prine is were adults. The onset in the older patients appeared to be more insidious the acute phase more prolonged and the

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pain in the limbs and back more pronounced than in the younger ago group in the older ago group the droredary form character ized by two distinct bouts of fever was seen infrequently. There was little if any correlation between the length and soverity of the initial symptoms and the final outcome of the disease Many of the ontents with nonparalytic poliomyelits had reclonned of the options with and reclonned

TABLE 2 Dur ton | sympt ms prort

dmis !	th hapit
Durat on (days)	Number f
1 or 1 s 2 4 5 7 8 m re	15 66 23 14

and sovere initial symptoms while man of the patients with paralytic poliomyolitis had mild symptoms. In the average patient the fover lasted from 5 to 9 days. Here also there was no direct corrolation between the degree of fover at the time of onset and the type or severity of the disease. Eleven patients (9 percent) had paralysis on the first day of fever. The onset of paralysis in one natient occurred on the first day after the temperature had returned to normal and on the second day in another.

Spinal fluid findings Spinal fluid examinations were performed on all patients on admission or soon after Ten cells or less per cubic millimeter in the spinal fluid were considered a normal finding The spinal fluid cell count on admission ranged from 2 to 900 per cu mm (table 3) There were 11 patients who had a cell count of less than 10 on the initial examination. Of these three were clinically past the acute stage and all three had an clevated spinal fluid protein Of the remaining eight patients soven had elevated cell counts on repeat examinations. There were 33 nationts who had a coll count greater than 150 per cu mm The spinal fluid protein value ranged between 15 and 100 mg per 100 ml (table 4) In five of our seven rationts with a se ere form of the disease the fluid on initial examination early in the acute pha e of the di ease revealed a high cell count and a high total protein concentration : e a cell count greater than 100 per cu mm and a protein greater than 100 mg per 100 ml This find int was not present in the remaining 111 patients. The cell count in relationship to the severity of the disease is summarized in table 3

Age and sex The largest number of cases comprising about 4 percent of all admitted principles as in the 1 to 10 year old group (table) The vounge tipitient was a months of age and

the oldest was a 50 year old man (A detailed breakdown by age is presented in table 5) The ratio by sex was 3 to 2, with males predominating

TABLE 3 Spinal fluid cell count in relationship to severity of poliomyelitis

	Cell count per cubic millimeters				
Type of poliomyelitis	Less than 10	10 50	51 150	151 300	301 900
Nonparalytic	1	13	14	10	1
Spinal Hild Moderar Severe	1	10 4	13 4 2	6 5 4	1 3
Bulbar-encephalitic	2	8	13	3	
Total	4	35	46	28	5

TABLE 4 Sp nal flu d prot n in patients w th acute poliomyel t s

Spinal fluid prot in (mg per 100 ml)	15 40	41 80	81 120
Number of pats at	57	53	8

TABLE 5 Age group of patients with pol omyel tis

Age group (year)	N mber of pat ent
Und r 1 1 5 6 10 11 15 16 70 21 30 31 40 Over 40	6 29 20 3 7 36 16

Seasonal incidence The peak incidence of poliomyelitis in the Territory of Hawan has varied from year to year but has usually occurred in the spring months in the 1953 1951 epidemic the peak was in March (table 6) From our small series it appeared that the virulence of the disease was greatest early in the epidemic The majority of our severe and moderately severe

cases occurred in the first 19 veeks of the epidemic In Decem ber 1950 there vere 12 patients admitted with acute polionie litis Of these two had respiratory paralysis and in four others the disease was of moderate severity The extent of involvement in the patients admitted in January and February 1954 was sim ilar to that in those admitted in December By March 1954 the virulence of the disease was decreasing and 11 of the paralytic patients had mild involvement.

TABLE 6 I cud no f cut p	1 -	τν I t	by m nth
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	Ca		
мъ	Paralyts	Nonparalyt	Tal
1953 D mbe	10	2	12
1954 Juany Farmany	11 12	4 2	15 14
Ma h April	19 5 7 9	2 2	21
Visy Jun July	9	8	16 10
A gus Septembe	1	5 3 2	6
Oc be N mbe	1 1	2	3 2
T tal	9	39	118

Deaths There were two deaths in the group of 118 patients Considering only the 79 paralytic ca es the fatality rate was 25 percent. If we consider only the 14 respirator cases the mortality rate was 14 3 percent. The two patients who died were 29 and 31 years of age respectively Both had evere bulbar spinal type poliomyelitis

MANAGEMENT

The following is a resume of the therapeutic regimen at this hospital during the 1954 epidemic

\onparalytic polionyelitis cases These patients were treated with bed rest standard hospital diet and hot packs for relief of muscle pain and spasm two to four times daily. The consti pated patients ere given milk of magnesia and enemas every other day as required In addition they received daily physictherapy Five days after the patients became afebrile they were transferred to the orthopedic service for further evaluation

Spinal poliomyelitis cases The patients with spinal poliomyelitis were treated similarly to those with the nonprialytic form of the disease Urinary retention, if present, was treated by the use of an indwelling catheter and irrigations with potas sium permanganate solutions three or four times daily The in dwelling catheter was removed in 3 to 4 days, and usually recatheterization was not necessary Prophylactic antibiotics were given while the catheter was in place Hot packs gave relief of muscle pain and spasm in the majority of patients Aspirin occasionally helped the remainder Foot drop was corrected by the use of a footboard

Bulbar poliomyelitis cases Patients with mild bulbar poliomyelitis were treated much the same as the patients with the nonparalytic form of the disease except that their diet was of a liquid nature. If they had difficulty in swallowing, they were given about 2 000 ml of fluids intravenously daily until their temperature returned to normal, when nasal gavage was begun Initially, the feedings were small, consisting of only 2 or 3 ounces of fluid. The amount was gradually increased over a period of several days to the point where the patient was receiving from 10 to 12 ounces every 4 hours. These gavage feedings contained about 1 calorie per ml If respiratory difficulty was present, a tracheotomy was performed and the patient was placed in a respirator. The patients with respiratory difficulty were given penicillin or if allergic to penicillin, erythromycin and streptomycin combinations.

Poliomyelitis patients with respiratory muscle paralysis A number of simple clinical tests were used to determine presence of breathing difficulty. The length of time the patient could hold his breath or the duration of phonation was a rough index of the momentary reserve Ability to cough proved a good index of function of the laryngeal, diaphragmatic, and abdominal muscles The vital capacity measurement was also useful 1 It was our practice to consider a patient with weakness of the respiratory muscles in need of artificial respiration if the vital capacity dropped to 25 percent of the predicted normal If the patient had appreciable impairment of the diaphragm, used the accessory muscles for breathing, or complained of air hunger, and there were other symptoms of exhaustion, vital capacity readings above 25 percent did not contraindicate the use of respiratory aids After an elective tracheotomy was performed, the patient was placed in the tank respirator and he became a nursing problem under close medical supervision Tracheotomies were performed in 13 of the 14 respirator patients as an elective procedure. The fourteenth patient was an emergency case because of the ad

vanced respiratory distress on admission. The respiratory rate and the negative pressure maintained in the respirator were such as to produce the required tidal volume as predicted for the patient. For the average adult the rate was set at 16 to 18 cycles per minute and the negative pressure was maintained at -15 to -17 cm of water Particular attention was given to thorough training of the nurses and the hospital attendants in the correct procedures of carring for patients in respirators. In both training and practical application emphasis was placed on maintenance of an adequate airway gentle removal of secretions in the trachea by suction maintenance of correct pressures within the respirator and emergency technics for manual operation in the event of a nower failure.

During the februle stage the patients received adequate fluids intravenously. When they were affebrile they were given a high calcine duct with vitamin supplements. Penicillin was administered daily and streptomycin was jiven twice weekly. Hot packs were used to relieve muscle spasm and pain unless the rectal temperature was greater than 10° F. Gastric dilatation was watched for and readed with a stomach tube as the condition presented itself. Pressure ulcers were prevented by the frequent turning of the patient.

The patients were routinely coughed three to four times daily within the respirator A negative pressure of from 35 to 40 cm of water for adults and from 25 to 30 cm of water for children was obtained by inserting a vacuum hose from a tank type vacuum cleaner into a porthole. When the desired negative pressure was obtained the bedran port was rapidly opened and allowed to remain open for another complete cycle. The procedure was re reated for six coughs after which the patient was allowed to rest for 5 minutes The series of coughs were repeated three times three to four times daily If there was evidence of atelec tasis or pneumonia the patient was given aerosol therapy using alevaire (brand of a detergent superinone) (brand of crystalline trypsin) prior to the coughing procedure During the short rest periods between the series of coughs secretions were removed through the tracheotomy tube with the usual aspiration apparatus and a No 10 French urinary catheter

After the patient became afebrile he was removed from the respirator for short periods by using the Bennett portable intermittent positive pressure machine. The respirations were curried on by manually tripping the machine 16 to 18 times a minute under a positive pressure of 16 to 18 cm of water. The use of the Bennett portable intermittent positive pressure machine great [5] facilitated the removal of the patient from the respirator for nursing care and positional change. Adequate minute volume was maintained durine this procedure.

Muscle tonus and vital capacity were checked periodically After the patient was afebrile and the vital capacity had improved to about 30 percent of the predicted normal he was removed from the respirator for short periods, once or twice daily grad willy increasing the time out of the respirator. He remained in the respirator for sleeping at night until he tolerated at least 6 hours continuously out of the respirator during the day. If he was still unable to cough he was returned to the respirator temporarily for the procedure. It was noted that when the vital capacity reached about 50 percent of the predicted normal the coughing strength was usually sufficient to clear the tracheo-thronchial tree. After the patient had been weahed from the respirator and could cough satisfactorily, the tracheotomy tube was removed. Prior to removal however, the tube was plugged for from 5 to 7 days to check for difficulty in handling secretions.

DISCUSSION

All six of our patients under 1 year of age had paralysis on admission. The diagnosis was confirmed by spinal fluid examination. There were undoubtedly rany cases of nonparalytic polionivelitis missed in children under 2 years of age.

The frequency of nonparalytic poliomyelitis was highest in the younger age groups constituting 37 percent of all cases of poliomyelitis in the 1 to 10-year group and 40 percent in the 11 to 20-year group whereas it was 20 percent in the 31 to 40-year group and 30 percent in the 21 to 31 year group

The Hawaiian peak incidence in the spring rather than late summer as occurs in the mainland may have been due to the mild weather experienced here throughout the year

The decision as to whether or not exhaustion due to respir ators impairment exists in a given patient was at times controversial However, in the patients with respiratory ruscle paralysis it was thought safer to err on the side of using artificial respiration early. This avoided sudden adverse changes in the patient's condition due to impairment of the airway, rapid procession of weakness of the ruscles of respiration, or decrease in the functioning lung tissue because of atelectasis and pneuronia Clattrer recently listed the criteria for the clinical determination of types of breathing difficulty.

There have been considerable differences of opinion as to the indications for trachectomy ^{2,1} It was our fractice to do trachectories in those patients that showed progression of the bulba, signs plus respiratory inadequacy as well as where there was obvious impairment of the airway by paralysis and account lation of secretions.

There were 26 cases of the bulbar encephalitic type of poliorivelitis of which 7 were very severe and 6 moderately severe 1728

It was our thought that the mortality was reduced by placing these patients in a respirator as soon as indicated Tracheotomy was performed as an elective procedure thus avoiding the ne cessity of an emergency operation. When severe ventilatory fail ure is present the emergency tracheotomy is technically diffi cult We believed that the tracheotomy tubes provided a better means of removing the secretions and that they facilitated the use of the combined respiratory pressures. The use of the positive pressure early in the disease helped prevent pneumonia and atelectasis especially in the more severely involved cases Although the Bennett intermittent positive pressure apparatus could be used with a mask it was more fatiguing to the nationt and beightened his apprehension more than when the intermittent positive pressure was used through the tracheotomy tube

We found that the frequency of negative spinal fluid findings was lower than that reported in most series of cases 7 This may have been due to the repeated examination because the percentage of normal spinal fluids on the initial examination was similar to that in other series

SUMMARY

Of 118 cases of poliomyelitis involving military personnel and dependents during the 1954 epidemic in Hawaii 33 percent were nonparalytic 99 percent were bulbar encephalitic and 45 percent were spinal The over all mortality rate was 1 7 percent

This series was similar to others reported except for the sea sonal incidence and spinal fluid findings. About 7 percent of the patients showed no pleocytosis or increased spinal fluid protein on admission however this was decreased to less than 1 percent on repeated spinal fluid examinations

The length or severity of the prodromal symptoms had no bear ing on the final outcome of the disease and the virulence of the disease was greatest early in the epidemic

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MANAGEMENT OF PSYCHIATRIC PROBLEMS BY THE DISPENSARY PHYSICIAN

SHELDON T SELESNICK Fist Leut nant MC USAR

THE BELIEF that we create problems by exploring the psy chologic reactions of our emotionally disturbed patients is like ascribing the cause of a fever to the thermometer. Further, to avoid a psychiatric problem when it exists is to fail to take the temperature of a patient because we fear we will be unable to cope with his fever

Modern medicine is dedicated to the ultimate goal of alleviat ing discomfort With the exception of the antibiotics, there are few, if any, medicines that effect a complete cure Even with surgical removal of diseased parts, there is not complete restoration to anatomic normality Despite the presence of the residual abnormality (scar tissue) the practitioner is satisfied when functional homeostasis is obtained Too often when we are con fronted with psychiatric problems we rationalize our frustrations over the failure to initiate a channelization of a therapeutic regimen by referring the patient to a specialist for the "cure" Psychiatric medicine however is also geared to diminishing discomfort, with few opportunities for eliciting a complete cure We cannot dispel our frustrations by rationalizing that psychi atric problems are infrequent Indeed, it has been variously es timated that from 40 to 80 percent of patients seen by the general physician are suffering from symptoms directly related to enotional problems 2 1 In view of the shortage of psychiatrists, the first-echelon physician has the responsibility of recognizing and managing these problems, which are real and frequent.

The need therefore arises to consider how best to use the arramentarium at the disposal of the general medical officer. The purpose of this article is to aid the dispensary physician (1) in deciding which patients he can and should handle (2) in planning a program for the management of these patients (2) in deciding which patients should be referred (and to whom) and (4) in preparing patients for referral to a psychiatrist. By me ce sity the depth and the scope of this discussion is limited.

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it does not deal with research and makes no attempt to teach psychotherapy or discuss in detail the problems of individual patients. The suggestions made are general and it will be noted that some are inapplicable to combat situations

For convenience this article is organized around the following diagnostic categories (1) Schizophrenia and depressions (the two most frequently seen and perhaps most confusing of the severe mental illnesses) (9) psychoneuroses and (3) character and behavior disorders

SCHIZOPHRENIA AND DEPRESSIONS

Schizophrenia It is a simple diagnostic task to recognize an overt schizophrenic reaction with classical symptoms such as hallucinations delusions illusions stereotypy short attention span circumstantiality and irrelevancy of speech bizarre ide ation feelings of unreality and complete intellectual dysfunc tion It is more difficult however and just as important to rec ognize the incipient or early schizophrenic. The schizophrenic process is a disease characterized early by the withdrawal of emotional life from reality. It is only later in this continuum that the intellectual dysfunctions and thinking disorders become clinically prominent. The schizophrenic is ever trying to dimin ish his discomfort by reducing emotional contact with the people who he believes have hurt him The schizophrenic has feelings and emotions but they are expressed inappropriately symbol ically (gestures grimaces posturing) or suppressed entirely (apathetic and blunted affect) By consulting members of the man's unit we can learn something of his emotional reaction to others. But right before us we have an index as to how the soldier reacts emotionally How does this patient respond to the interviewer? How does he react to humor? Are his verbal izations incompatible with the emotional tones expressed? Does he appear to be at the same emotional level at all times appar ently expressin, a paucity of emotion? Although schizophrenia is a syndrome the affective reaction of the patient is the most important single characteristic. It should be noted however that cultural differences between patient and physician should be considered (e g a Caucasian northern born physician may misunderstand the emotional reactions of a southern born Aegro an American born phy ician may misinterpret the reactions of a foreign-born patient) Talking with a confrere of the patient who is in his unit and of similar cultural origin often mitigates this confusion

Depressions Patients are often referred to the psychiatrist for depression then in fact they feel blue or unhappy Psy chiatrically depression implies that the patient is seriously ill and must be considered a possible suicide risk. The differ

ence between the symptom complex presented by the reundic and that of the psychotic depressive is a quantitative one. However, the psychotic rots of a recent trainment of a recent trainment of the psychotic rots of a severe reundic depression may decelop into a psychotic one. Some of the features which suggest depression are initially vague soriatic complaints, especially constitution in somina, ancevia restlessness, importance, and the inability to one Psychomotor retardation and feelings of severe records self-reproach and guilt are cardinal symptoms. Often after an interview with this type of patient the feelings of hop-lessness of the patient may be felt by the physician so that he too feels dejected.

Any patient showing affective signs or symptoms of an incipient or full blown schizophrenic reaction or of a sovere depression should be referred to the psychiatrist for further evaluation.

PSYCHONEL POSIS

Grinler' has stated "Psychoreuroses are the result of conflicts between opposing inner psychological forces or between certain drives within rain and his restricting, frustrating or punitive environment." Whether the environment is in actualit threatening or in only perceived as such by the psychoreurotic person often determines the course of management. What may appear to be a neutronic problem can, in reality be a situational one On the psychoreurotic person can actually fe in a threatening em comment. In both cases environmental manipulation should be attempted if he perceived the environment as dangerous when it in not so psychotherapy in the teatment of choice. The avertures of relieving external stress are discussed law.

The physician can use psychotherapeutic technics to minirize the internalized conflicts of his patients. However, before the physician can successfully undertake psychotherapeutic approaches he must first understand that "the therapeutic re sults of Libeling a man a goldbrick' are harmful tude of impatience or disgust always delays and sometimes prevenus adequate treatment " Of paramount importance to successful psychotherapy is a good relationship between patient and physician The fact that the Latter is an officer has its ad vantiges in establishing confidence but it also can be a dis ad antage depending on how it is used Authoritative accent ance has a positive effect authoritarian control has a negative ore The physician mult have a sincere desire to help, sympathy for the patient and his problem and an appreciation of the posi tive personality characteristics of the ran entrusted to his care At the same time he must have introspected sufficiently so as not to impute his own feelings to the patient Objectivity is

important Whitehorn suggested that the therapist consult another physician not necessarily a psychiatrist so that objective crientation may be maintained. The consulting physician may point out when the therapist or the patient appears to be resist ing therapy and whom instakes of over identification are made. The consultant with objectivity twice removed often has other interpretations to offer which can be of value A psychiatric authority has expressed another basic qualification of the therapist namely the ability to listen. It is the person with the problems (presumably the patient) who has the need to talk

Initially the physician must approach the patient with the attitude of how can I alleviate the prevailing disconfort and thus establish and limit his goals of therapy For example a soldier had minor personality problems but functioned adequately until he had an acute episode of anxiety Exploration revealed that the soldier recently had a sexual experience about which he felt extreme guilt. The physician in this case set for himself the goal of relieving the man's feelings of guilt and when this was accomplished the patient's anxiety was diminished. The dispensary physician helped this solder achieve psychologic and functional homeostasis without curing his patient of all his problems.

In the management of psychiatric problems the physician as be would in any field of medicine must familiarize himself with basic therapeutic approaches Levines sood on psychotherapy in medical practice is especially noteworthy Some of the more commonly applied psychotherapeutic approaches which are often used in computation are

- 1 Explanative This approach often relieves the fear of the patient that he is suffering from a severe or incurable illness. In addition, it assures the patient that the doctor is interested and does not consider the symptoms imaginary.
- O Supportive These technics are aimed at encouraging the patient by pointing out his accomplishments and potentialities Reassurance is a supportive technic whereby a patient's confidence is restored by pointing out forms of satisfactions in his past life whereas suggestion and she patient in discovering new areas of satisfaction Accopting the patient while he ven tilates pent up hostile feelings is another form of support. This technic has the additional benefit of helping the patient formulate the advantages and disadvantages of certain decisions with out direct deduce from the physician.

Cas 1 Λ sold e bec m everely greed shortly fter h v1 g a mole t moved ft m h s se Priot to thi he had felt th t he was ugly tupid nd d l ked The remov l of the mole focused hi e t

tivity onto his face. The patient ventilated freely his resentment of his father who regarded him as dumb and worthless. While accepting the patient's hostile feelings, the therapist pointed out the soldier's success as an athlete in high school and reassured him that he was at lea t average in appearance and intelligence. The patient was encouraged to continue his college correspondence courses. During the course of the treatment, the patient began dating and new areas of satisfaction increased his feelings of security.

3 Deeper forms of therapy (uncovering, interpretative, et cetera) unlike the explanative and supportive types, attempt to uncover unconscious problems, destroy inadequate defenses, and rebuild new mechanisms of defense This therapy which often involves exploration of early childhood, dream analysis and free association technics is usually the task of the specialist However occasional interpretations that are understood by the patient and the physician and that do not mobilize anxiety may reveal insights and thus be constructive

It is not within the scope of this article to discuss somatic manifestations of neurotic problems Psychosomatic medicine basically, "concerns itself with the psychologic approach to general medicine" "It is both a special field and an integral part of every medical specialty "Alexanders" book is highly instructive concerning the meaningful function of somatic symptoms. It discusses at length the modern concepts of such psychosomatic illnesses as peptic ulcer, hypertension, hyperthyroidism, asthma ulcerative colitis, et cetera.

It is a well known fact that the process of referring a mildly psychoneurotic patient to a psychiatrist may result in the even tual fixation of symptoms 3 in the time lag between referral and consultation the patient may come to feel that he is "crazy" or "misteriously" ill In general, and one of the following situations as an indication for referring 2 psychoneurotic patient to a psychiatrist (1) When the patient has symptoms which have been intractable to ordinary forms of medical management and psychotherapeutic approaches (2) where the neurotic problem is well established, and the patient is functioning inadequitely and appears motivated for more intensive forms of treatment (3) when the problem is severe enough for special care (e.g. hospitalization) and (4) when the dispensary physician believes that the dynamics of the problem are too obscure for him to under stand

Case 2 A 23 year-old soldier was referred to a psychiatrist from the medical inpatient service because of a midepigastric pain episodic in nature which had persisted for 8 weeks and which necessitated hospitalization (intractable severe special care necessary—see (1) and (3)) Routine medical studies failed to reveal an organic basis

f r the disturbance Expl n tive and upp tive therapy were to no va l Repress d ho t litt toward parent I figure and pa t hi tors of peptic ulcer and asthma suggeted rather chronic well established eur tic pattern This patient w s well elected for referral to the p ychiatrist for expl r t n of possible uncon cious dynam cs. The patient had been marr ed 6 months. His wife h d wr tten letters in which she t ld of her pregnancy and complained of cramping ensation n the abdome The pat ent readily di cussed h identif cation with his wife and her symptoms. He w s able to acc pt the interpretation that h s ympt m tology wa related t hers In discussi g his dr ams he noted that his wife was alw ys present but ever preg ant Hos tility to the unborn child (who would divert his wife si ttention from the p tient) w s n t t k n up d rectly in the pv A progr m was ar r ng d with the m die l dep rement whereby the parient co ld subli m t repressed h stil ty feelings thr ugh physical therapy Furthe psychi tric interv w r yealed that the p tie t gradually became free of hs pigastric d stress

CHARACTER AND BEHAVIOR DISORDERS

The Joint Armed Forces Nomenclature pamphlet which lists differentiates and describes psychiatric conditions as found in the service defines character and behavior disorders as

characterized by developmental defects or pathological trends in the personality structure with minimal subjective anviety and little or no signs of distress In most instances the disorder is manifested by a lifelong pattern of action or behavior (acting out) rather than by mental or emotional symp toms" It is often difficult to clearly distinguish between neuroticlike behavior in the character behavior disorder and psychoneurosis psychosis or situational/maladjustment A thorough social history contributes to making distinctions

The history of the patient with a character and behavior dis order as distinguished from that of the neurotic person, pri marily shows continuous difficulty in making a sustained ad justment In addition he appears to be unable to profit from experience Positive personality features and average or supe rior intelligence may aid in good initial adjustment. The dis tinction between a patient with a mild character and behavior disorder (e g a passive and/or dependent person) and a neu rotic person is not important because results from brief psychotherapy can be extremely helpful for the patient with mild character disorder and gratifying for the physician It is only when the character behavior disorders are severe that distinction is pragmatic (the management of these cases is discussed later)

A past history of severe maladjustment may indicate that the soldier has had previous psychotic episodes Questions should be asked concerning past hospitalization and such treatment

as electroshock and insulin shock However, even though the prinent may not give a history of past psychosis "it is quite likely that the pre existing psychopathy (character and behavior disorder) may facilitate the development of some of the mental diseases "15 Therefore, an examination of the patient's mental status is in order to rule out the existence of a present psychotic illness, even in the presence of a history compatible with a character behavior disorder

The person suffering from a siturtional maladjustment, unlike one with a character behavior disorder, has difficulty adjusting to newly experienced environmental factors or to especially trying and difficult situations with no evidence, however, of any serious long standing or underlying personality defects or chronic neurotic patterns "11 Anxiety, alcoholism, asthenia, poor efficiency, or low morale may be manifestations it should be noted that, if unrelieved, these reactions can result in psy choneurotic or psychopathic like reactions "1 The management of these situations involves working with the environment (mainpulation) or directly with the patient (morale building)

Our first consideration here is environmental manipulation As the mental health adviser, the dispensary physician is justified in exploring a patient's interporsonal difficulties within his unit which may have resulted in psychologic discomfort to his patient. The man's company commander or his first sergeant can be interviewed to ascertain if interpersonal conflicts can be relieved. If, through discussions, it is not possible to solve interpersonal problems, and the physician believes that the man can make a better adjustment in a new job or a new unit, the physician should certainly make such recommendations.

Some problems of morale also may be classified as manageable through environmental manipulation. The tensions may not be due to problems within the unit, but may be caused by concern over family matters "back home." The soldier should be informed of Red Cross facilities for finding out facts about the home situation Morale leave or compassionate transfer may be indicated. Such soldiers should be referred to the chaplain, not to the psychiatrist whose primary function is the diagnosis and treatment of mental illnesses.

There are some soldiers who are in need of morale building and moral support, $e\ g$ the recruit who says, "The Army is not doing anything for me" It can be pointed out, sympathetically albeit realistically, to this man that the Army is not supposed to do anything for him, and that his presence in the Army is in fulfillment of an obligation to his government. It can be emphasized that if his experience in the Army is to be of benefit to him he must take the initiative in exploring educational and

entertainment facilities as well as those of special services The chaplain often gives invaluable aid to the soldier i ho is in need of morale building group or religious activities or help with certain marital problems

The psychotherapeutic management of patients with more severe character behavior disorders is a difficult task Any of the therapeutic technics previously discussed may be attempted with ventilation being perhaps the most effective Certainly this in itself is not remedial but ventilation often results in relief from anxiety and resentment, and lessens the need to set out emotional conflicts in a socially undesirable manner However it is in treating the patients with a severe character behavior disorder that supportive psychotherapeutic approaches most often need to be combined with environmental manipulation

Ca e 3 A 40 y a -old look lic who had ben the ery ce for 14 vers w sent t the psych trist for cure of h looholi m It was brought out the initial terview that this man was in a lie o tf t comp ting w th s ldier 15 t 20 years his in 1 He continually ffered blows to he self esteem when the young a men referred to Dd or the old ma In a a e such s the where lcoh li m , a hab t pattern developed ov the v ar the o ly reali tic peroach is to rele e if possible the tress conditions so that alco holic int he may be dimin hed A tra sfer to a less thre teni g environment w recomm nded Thi cas illustrates ne d for a kind of n m tal ma ip I tion thit ca be bett t w luat d by the in the dispensary be use f his cl e pro imity to the or blem

Psychiatric referral of the patient with character and behavior disorder is indicated when the dispensary physician has been unsuccessful in the management thereof jet believes that the handling may be beneficial If the possibilities of management (intrinsic and extrinsic) have been explored and the physician is of the oninion that the soldier will not respond to further of forts but instead is likely to be more threatened (and as a result a more severe problem to the Army) administrative separation should be recommended Patients who have acted out repeatedly in an asocial or antisocial manner and appear to be heading for disciplinary actions can be released from the service under the provisions of Army Regulation 615 368 (unfitness) Soldiers who despite efforts at reclassification and reassignment appear unable to adapt but who have not been severe problems are re leased administratively under the provisions of Army Regulation 635 009 (unsuitability or inaptitude") When these conditions prevail the dispensary physician has the authorization should take the responsibility for writing a certificate recom mendin administrative separation He should include in the

statement that (1) the prtient is able to distinguish right from wrong and to adhere to the right (2) he possesses sufficient montal capacity to understand the nature of any proceedings against him, and intelligently to conduct or co-operate in his defense, and (3) there is no mental or physical disability present that is sufficient to warrant separation from the military service through medical channels. 20 It is not absolutely necessary for the physician to indicate whether the man should be separated under Army Regulation 615 368 or Army Regulation 635 200 It will suffice merely to recommend administrative separation under appropriate provisions. The relationship between the dispensary physician and the company commander certainly is enhanced when the medical officer takes this responsibility without referring it to a psychiatrist who actually has less knowledge of the factors at hand

PREPARATION FOR THE REFERRAL

As important as the recognition of the need for referral to the psychiatrist is the preparation of the patient for the referral Before the referral is made, the physician must understand that personal motives may affect the reason for his decision Hostile rejection of the patient who has mobilized the physician's any nety may result in a punitive measure, which finds outlet through a psychiatric referral. An aid to the physician in understanding his own motives is writing out questions on the consultation sheet that he desires to have answered e q a question of differential diagnosis, a question of whether or not supportive technics are sufficient to alleviate the patient's presenting com plaints, and other questions referring to the management and disposition of the given problem. The way in which the prepar ation is handled has a significant effect upon the attitude with which the patient comes (or refuses to come) to the psychiatrist as well as upon the illness itself. The implicit or explicit use of such terms as "psycho" "schizophrenic" crazy, or shock treatment" carries serious adverse emotional impacts A sur reptitiously arranged referral will destroy the confidence of the patient in both physicians An attempt to conceal the identity and the purpose of the consultant by referring to him as a "nerve doctor" rather than as a psychiatrist "serves to reinforce the patient's need to believe that his illness is organic and has no connection with his inner personal self or his intimate feeling toward significant people in his life "21 At the same time, efforts should be made not to overrate the coming interview by promising the patient a cure

The referral should be handled in a simple, honest, direct fashion, indicating that the psychiatrist is an accepted, respect able physician as is any other specialist No embarrassment need be attached to the fact that the physician thinks that the

patient has emotional problems. Bond and Flumerfelt' suggested beginning in this manner. I think the symptoms you have may be very largely related to some of your problems and I think you should go to someone who is more familiar with dealing with such things than I am \(\) brief explanation of how people react physiologically to conditions of emotional stress should be made (e o the somatic manifestations of fear) The fact that the referring physician is concerned about the patient's symptoms helps dispel the doubt that it's all in your mind or just psychological " The patient should be prepared for the fact that in order for the consulting physician to understand his emotional feelings intimate and personal questions will be asked The referring physician can leave the patient with the final feeling that should be not be treated by the psychiatrist for any reason he is not a forgotten case but can return to the referring physician for help following the psychiatric con sultation

SUMMARY

As a general practitioner the dispensary physician has the right and the obligation to allay discomfort in his psychiatric patients The prevalence of psychiatric problems and the shortage of psychiatrists obviate any other course. The psychiatric patient presents a confused clinical picture and the channel ization of a therapeutic regimen is often obscure. This article attempts to offer suggestions for the diagnosis management and referral of psychiatric patients. The psychotherapeutic and environmental manipulative devices existing in the general med ical officer s armamentarium are explored

It is important to evaluate the affective reactions of the early schizophrenics Unit contacts and the patient's reaction during the interview aid in this evaluation Psychiatrically depressed patients who are serious suicidal possibilities display various degrees of some symptoms which are listed Explanative sup portive and interpretative approaches although superficial may he helpful to some neurotic patients

Persons who are suffering from certain situational difficulties may be helped through the Red Cross the chaplain and morale building interviews or through the development of better re lations with men in their unit Patients with mild character and behavior disorders may be approached psychotherapeutically the same as a neurotic person When soldiers with severe char acter and behavior disorders appear to be heading for increasing difficulties the first echelon practitioner should take the initi ative and recommend administrative discharge

Psychotics depressives or patients suffering from psychoneutrotic disorders which are intractable chronic or severe should be seen by the psychiatrist, as should any other patient whose problem appears too complex to be approached through ordinary methods Finally, as important as the actual psychotherapy of patients by the dispensary physician is the prepar ation of other patients who are to be referred to the psychiatrist Simple, frank, and direct explanation of the need for this referral is recommended

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DIAGNOSTIC RADIOGRAPHY WITH RADIOACTIVE ISOTOPES

JOHN B STORER C pt MC USAR ADOLPH T KREBS Pb D.

M OBILITY is basic to modern concepts of warfare Because of the emphasis on mobility under field conditions the order and a constant of the emphasis of the emphasis of the end

A lightweight rugged completely portable radiography unit which would operate independently of sources of power and specialized equipment offers obvious advantages for military and civilian disaster usage Localization of metallic foreign bodies such as shell fragments the diagnosis of fractures and the less dramatic but equally valuable application to patients observed at medical and dental sick calls are a few obvious uses for such a unit

Over the past 2 years the Army Medical Research Laboratory has devoted considerable effort to the development of a practical completely mobile diagnostic x ray unit A workable model which weighs less than 50 pounds and which will operate under field conditions without specialized equipment has now been developed Because the radiation is emitted by a radioactive isotopic source no electrical generators wiring circuits or control panels are required The radiographic films may be developed in a self contained cassette or film holder and no solutions water or darkroom are required

There are two mechanisms by which the impin, ement of electrons on the target material produces x rays. The first mechanism is by the production of what is known as characteristic x rays. Normally the atom is in a stable state. If one of the high energy electrons from the electric discharge across the vacuum tube crashes into the stable configuration of the atom there is a cer tain low probability that it will eject one of the satellite electrons from its orbit by collision (probably interference with the

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electric field). When such an ejection of an electron occurs the atom has an unstable configuration If the electron was removed from one of the inner orbits its place will be taken immediately by an electron from an outer orbit which moves in to replace it. In moving in, however, this electron goes from a higher to a lower energy state. By the laws of conservation of energy the differ ence in energy cannot be lost and in this case it is emitted as an electromagnetic radiation of proper wave length to be classified as an x ray. In other words the energy of the x rays are a charac teristic of the target and are therefore called "characteristic

The second mechanism of x ray production results from bremsstrahlung or braking radiation." In this case the incident electrons on entering the electrical field of the tariet atoms. are slowed down and eventually stopped without necessarily knocking out" any orbital electrons These fast-moving incident electrons have considerable energy which must be given up in heing brought to a stop. This energy may appear as heat, hight or as x rays Because the electrons do not all have the same initial energy, do not all enter the electrical field of the target atoms in the same way and are not all decelerated in the same manner. the resulting radiations show a wide variation in energy from very low to very high with the maximum being limited by the energy of the incident electrons

The higher the energy of x rays the greater is their penetrating ability Energy is usually expressed in thousands of electron volts (kev) or millions of electron volts (mev) \ rays with an energy of several hundred key are able to penetrate a consider able thickness of steel and are frequently used in industry for the radiographic study of castings welds et cetera Such highly energetic radiation is entirely unsuitable for medical diagnostic use, although it is of value in radiation therapy Medical radi ography is dependent on the fact that when x rays of suitable energy are made incident on a body part there is a differential de_ree of absorption of radiation by various structures which is related to the density of the structure If the energy of the radi ation is too high then it is almost equally penetrating for all tissue structures and no contrast is obtained on the radiographic film If the energy is too low it does not penetrate tissue suffi ciently to be of practical value For most diagnostic work \ ray ranging in energy from about 30 to 100 key are used The fire criterion then for useful dia nostic x rays is that their energy lies somewhere in the range of 30 to 100 key

The image cast by a structure on a film is somewhat and order to the shadow cast by an object in front of a light I' _ poligi is used as a light source then the shadow has clear, per ned margins If a diffuse source of light, such as a bank o more

bulbs is used then the shadow is poorly defined and has blurred margins. A similar situation holds for radiography. When the radiation source approximates a point (small focal spot) good definition is obtained on the film or fluoroscopic screen. When the radiation is emitted from a large area the definition is poor. It follows therefore that the second criterion for a useful diagnos tic radiation source is that the radiation be emitted from an area which approximates a point. The third criterion for a good source is that a sufficient number of x rays be emitted per unit time and that the total exposure time for taking a radiograph be reasonably short.

PRINCIPLES OF ISOTOPIC RADIOGRAPHY

It can be surmised that even with refinements conventional x ray equipment is likely to remain heavy relatively fragile and dependent on sources of electrical power for its operation. All these factors tend to limit mobility. If a source of radiation were available which fulfilled the above criteria for useful radiography, but which did not have the objectionable features of x ray machines with respect to mobility then a practical radiographic apparatus for use in advanced field units could be developed Such radiation sources are available in the form of radioactive isotopes.

With the great advances made in the field of atomic energy in the past dozen years a large number of radioactive materials which emit radiation very similar to that obtainable with x ray machines are now available. Not all these isotopes emit their radiation by the same basic physical mechanism Variations in mechanism and type of radiation emitted must be considered in the selection of promising isotopes and in the design of radiation units. The isotopes of particular interest for use in radiography may be listed in four categories.

1 Garma ray-emitting isotopes Gamma rays like x rays are electromagnetic radiations of short wave length. They are identical to x rays in physical characteristics and effects on tissues and differ only in their origin. Whereas x rays arise from transposition of orbital electrons of an atom or by bremsstrahlung gamma rays are emitted from the nucleus itself. Certain isotopes emit either or both types of radiation. When an atom nucleus is made unstable (by neutron bombardment in the case of most artificial isotopes) it may return to a stable state by emission of one rrore of its component particles (beta or alpha particles) in so doing it goes to a so-called excited state (higher energy level) It then may return to a normal energy state (ground state) by the emission of energy in the form of one or more gamma rays while most of the gamma emitting isotopes emit rays of energies too high to be useful in diagnostic radiography there are a fair

number which have samma rays of energies in the range of 30 to 100 key. Such isotopes are potentially applicable to diagnostic work.

- 2 h electron capture isotopes Some isotopes have relatively too many positive charges in the nucleus. To correct this situ ation the nucleus may draw in an electron (negatively charged) from the closest orbit of satellities namely the k orbit. This missing electron is then replaced by an electron from an outer shell. When the electron moves in an x ray is emitted in the same manner as from the metallic target of an x ray machine. In the case of certain isotopes this x ray is of proper energy for diag nostic use and has been utilized experimentally.
- 3 Internal conversion isotopes In certain gamma emitting isotopes of proper configuration the gamma ray may not escape through the orbital electrons but may react with one of the electrons and impart enough energy to it to cause ejection from the orbit. The place of the ejected electron is then taken by an electron from an outer orbit and an x ray is emitted in the process. This mechanism gives rise to a certain amount of the radiation emitted from a radioactive thultum source.
- 4 Beta emitting isotopes Most of the weight and lack of mobility in conventional x ray machines is associated with obtaining high energy electrons for bombarding a suitable target. There is nothing unique about these electrons and any source giving a sufficient number of similarly energetic electrons could be sub stituted for this part of the x ray machine. There are a number of isotopes which emit beta particles of various energies. Because beta particles are electrons, it appears likely that such isotopes might be of value for the production of x rays. In the simplest form an "x ray machine" could be made with a beta source in the following manner Encapsulate the radioactive material with a sufficient thickness of steel or other material to prevent the escape of any beta particles. This is easy to do because these particles are not very penetrating. Then add enough additional shielding material on all sides except one to prevent the escape of x rays An x ray beam will then be obtained through the un shielded side There are, in such a simple device three mechanisms by which beta particles give rise to x ray These mechanisms are
 - (a) "Characteristic" x radiation When the beta particles strike atoms of the encapsulating material or other source atoms in a certain percentage of cases they will eject electrons from one of the electron orbits. When this ejected electron is replaced by the moving in of an electron from another orbit an x ray is emitted. The energy of this x ray will be a characteristic of the type of atom (the element) bombarded

- (b) External bremsstrahlung As the beta particles are slowed down and finally stopped by the encapsulating or source material itself many of them will give up their energy as x rays (brems strahlung or braking radiation)
- (c) Internal bremsstrahlung In addition to the above two mech anisms which occur in the conventional production of x rays there is a third mechanism which is peculiar to isotopes The beta particles which are emitted are electrons which are ejected from an atom nucleus. The nucleus has certain energy forces which hold it together When these electrons (beta particles) are ejected they may be slowed slightly or their direction may be chan,ed by the nuclear energy forces. The energy of motion which they lose may then appear as radiant energy (x rays) These x rays are designated as internal oremsstrahlung to indicate that the interaction of the particle with the emitting nucleus is responsible for the production rather than the reaction of the particle with some neighboring or remote atom as in the case of external brems strahlung.

In addition to simple considerations of energies emitted by various isotopes there are other factors of importance in the selection of isotopes for radiographic use No isotope continues to emit radiation for an infinite period of time and the rate at which radioactive strengtl is lost varies from one isotope to another. The rate of loss of activity is generally denoted as the half life of the isotope is ε the length of time required for loss of half of the original source strength. It is obvious that to be of practical value for radiography an isotope must possess a reasonably lon, half life

Another factor which requires consideration is the relative availability and ease with which an isotope can be produced. For isotopes which are produced by activation of an inert form in a nuclear reactor (thulium for example) the so-called neutron capture cross section is of importance. The cross section is an index of the probability that any one neutron will react with an atom of the material to produce a radioactive atom. The higher the cross section the easier it is to produce an isotopic source of hi, is strength.

THE PORTABLE THULIUM SOURCE

Thulum¹⁷⁰ is the radioisotope produced by neutron bombard ment of naturally occurring thulum¹⁶⁰. It emits an 84-kev gamma any and an associated 52 kev x ray produced by internal conversion Both these radiations are of proper energy to be useful for human radio_craphy Because of the beta particles which are also emitted in the radioactive decay of thulum there is an accompanying oremsstrahlung and characteristic x radiation which results in a wide total spectrum of radiation energies. These accompanying oremsstrahlung and characteristic x radiation which results in a wide total spectrum of radiation energies. These accompanying oremsstrahlung and characteristic x radiation energies.

panying radiations, however, probably do not seriously interfere with picture taking. In addition to possessing radiation of proper energy the thulium possesses other desirable characteristics. It decays with a 129 day half life that assures a reasonably useful life Thulium¹⁹, the parent material is reasonably easy to activate in a nuclear reactor, because it has a neutron cross section of 118 barns. Due to these desirable characteristics thulium ¹⁷⁰ had been used previously by other workers to demonstrate the feasibility of isotopic radiography and was chosen by this lab oratory for use in the development of a practical source unit.

A 400 mg (about 1/70th of an ounce) sample of thulium obtained from the Ames Laboratory was activated in the materials testing reactor at the National Reactor Testing Station in Idaho The active material was doubly encapsulated in a thin aluminum container to prevent any leakage of radioactive material and placed in a lead hemisphere 5 inches in diameter to prevent exposure of transporting personnel to radiation. The sphere contained appropriate ports for loading and for exit of the radiation beam A shutter mechanism was incorporated to allow precision of exposure times. The entire unit which weighed 48 pounds, was then mounted on a pack frame for easy mobility. The source unit and pack frame are shown in figure 1.

The source unit is extremely simple to operate and requires little training. It is set up for use on telescoping tripod legs which allow easy adjustment of distance from source to the specimen to be radiographed. The shutter mechanism is opened manually and is closed by a manually operated cable release Exposure times (which with the present source vary from 15 to 180 seconds depending on type of film used, body part radiographed, et cetera) are measured with a stop watch or with a sweep second hand of a wrist watch. Figure 2 illustrates the operation of the source unit

Any type of standard radiographic film or paper can be used with the source The best results, of course are obtained with standard film and darkroom developing Because specialized equipment required for darkroom work may not be available under field conditions it may be necessary to use some sort of self contained" cassette (film pack) There are a variety of potential methods for producing cassettes which are suitable for field use The Land Polaroid method uses individual packets of developing and stabilizing material which are integral parts of the cassette Methods of simple, rapid development with a minimum of supplies as well as daylight processing are also available Figure 3 illustrates a typical roentgenogram taken with the portable source and developed by conventional means Figure 4 shows a roentgenogram taken with the portable source and developed in an experimental type cassette developed in this laboratory This particular type of cassette is completely "self contained" and requires no addi-



Γgur 1 Port bl th l m urce m ted on p k f me

tional facilities or equipment. While these roentgeno_rams do not match the technical excellence of conventional types it is appar ent that they are adequate for most emer_ency work. It is antici pated that considerably better pictures can be obtained with improvements in the source and in developing technics

THE PORTABLE ISOTOPIC BETA EMITTING SOURCE

In view of the numerous possibilities for the production of useful diagnostic radiations from isotopes it is apparent that the thulium Lamma ray source is not necessarily the only or best method for isotopic radio_raphy After considering alternative methods of isotopic radiography it was decided to attempt to adapt pure beta emitting sources to the problem by using the basic principle by which conventional x rays are produced \ rays are conventionally produced by bombarding a metallic target with high energy electrons The energy of the x ray beam produced is



Figure 2 Operation of the portable thulium source

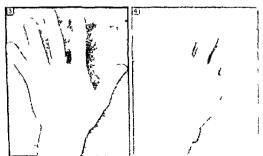


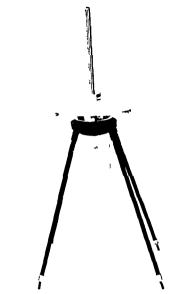
Figure 3 Typical roentgenogram taken with portable source and developed by conventional means. Figure 4 Roenigenogram taken with portable thuli m sourc and developed in an experimental self contained cassette.

characteristic partly of the target material and partly of the energy of the incident electrons Beta particles are electrons and various isotopes emit these electrons with various energies. By obtaining an asotone with proper energy and encasing it in a suitable target material it should be possible to closely approximate a conventional v ray beam It will not be identical because of an internal bremsstrahlung component (one source of x rays) which is characteristic of the isotope and because of external brems strahlung and characteristic radiation produced in the source material itself These factors will tend to give a broader spectrum of energies than is obtained with an x ray machine

In order to test the application of this principle to the problem of isotopic radiography the following preliminary studies were made A commercially available beta particle source consisting of radioactive strontium and radioactive yttrium in an equilibrium mixture was obtained The active material as obtained was com pletely encased in a steel cylinder At one end of the cylinder the wall is very thin (0 000 inch of steel and 0 010 inch of aluminum) This wall is sufficiently thin to allow some of the heta particles to pass through it. Such beams of beta particles are widely used in medical practice. The emergent beam consists almost entirely of beta particles emitted from the yttrium 90 which gives off the more energetic particles Practically none of the heta particles emitted by the strontium 90 are able to penetrate this window. A certain percentage of the beta particles stopped by this source material itself the walls of the cylinder or the thin window give rise to x rays (characteristic and/or brems strahlung) These rays were used to make roentgenograms Because the beta particle beam emergent through the thin window would contribute radiation dosage to the subject without contributing to picture taking the entire source was placed in a lucite well which absorbed these beta particles without interfering par ticularly with the x ray beam Figure 5 illustrates the setup used to make radio_raphs with strontium source. Despite a number of technical disadvantages to the particular source used (for ex ample it had a large focal spot and relatively low source stren,th) remarkably good radiographs have been obtained Figure 6 shows a typical radiograph made with this arrangement

This type of isotopic radio raphy is still in the experimental stage and has not been developed to the point of practical usage as yet, it does show considerable promise bowever and together with the thulium unit tends to indicate the vast potential for future development in the field of isotopic radiography

Th un d bed nd b 1 b Army M d 1R h L bor ory me tal mod l d lh gh und g g f ld t h be acpd dad miss large-vailbliforg lus d bio milli 1 p duc ad w ll b mad ndec d d snad ta as ha be mpled



F gure 5 Experimental setup for beta adiography
COMMENTS AND CONCLUSIONS

Diagnostic radiography of human beings by means of radio-isotopes is still largely in the experimental stage although feasibility of the use of thulumi⁷⁰ has been amply demonstrated and radiographic units employing this material will probably become available in the near future Such portable units would undoubtedly prove of great value to the medical services for use in the field (battalion aid, collecting, or clearing stations), in remote or isolated installations, or for emergency use in the event of civilian disasters At the present time isotopic units cannot compete with conventional x ray machines from the point of view of diagnostic excellence. Their value is primarily in their portability. The diagnostic excellence can undoubtedly be improved by further research and development. Improvement in the design.



Faur 6. Typ al ad grab mad with t t m w

source strength and purity of the thulium source described in this report is relatively easy to accomplish and would add considerably to the contrast and definition on films made with it

One difficulty with isotopic sources is that the energy spectrum emitted is relatively fived and cannot be easily varied as it can with conventional Coolidge tube x ray machines Changes in energy are desirable for makin radio_raphs of various body thick mosses It seems likely that with further research a number of isotopic semitting different gamma or x ray energies can be devil oped for practical use It might then be feasible to mount a number

of these isotopes on a revolving disk inside a radiation shield The radio_rapher might then be able to rotate the proper source into position for use in much the manner that a microscopist selects the lens on his microscope for proper magnification. When and if such an isotopic x ray machine is developed the combined portability and versatility of the unit should prove invaluable to the military medical service

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NO RADIOLOGICAL HAZARD

Many patients are given tracer doses of radioactive iso topes as a diagnostic procedure. In the event of an accidental death such a patient constitutes no radiological hazard because the tracer doses used are small Padio active gold (Aut) and radioactive todine (I 31) are however used therapeutically This is done only in a hospital and the hospital is required to have a radiation safety officer. No pa tient receiving isotopes should be discharged from the hos pital until his radioactivity is down to 30 mc If such a pa tient dies suddenly after leaving the hospital there is no radiological hazard in performing an autopsy or embalming the body

-EDITORIAL

in Jo mal of Ame ca M dical A sociation

p 773 Oct 23 1954

DIAGNOSTIC CRITERIA OF FIBULAR COLLATERAL SPRAIN OF THE ANKLE

MARSHALL K STEELE | L 1 na 1 (MC) USN

EVERY plantar flexion inversion injury of the ankle joint unaccompanied by roontgenographic evidence of a fracture is classified as a sprain but should be considered a potentially self reduced dislocation until proved otherwise

It is true that the sprain dislocation is of momentary duration and that it is spontaneously reduced but if such an injury is treated as a simple sprain serious incapacity may remain be cause of relaxed ligaments and easy subluvation of the ankle joint

In the simple sprain there has been stretching or tearing of a few fibers of the fibilitar colliteral ligament of the ankle with normal stability of the joint. On the other hand in a severe sprain there has been an avulsion of part or all of the components of the external ligament including the lateral capsule with increased mobility of the talus whenever the foot is forcibly invorted and plantar flexed.

Sprains have long been recognized as is indicated by the story of Darius in 400 B C and yet there are but few scattered reports on the subject of injury to the fibular collateral ligament of the ankle

Bonnn and Watson Jones have investigated and reported on this night Bonnin stressed the importance of the calcaneofibiliar ligament. Leonard' and Anderson and associates discussed the anterior talofibular ligament in an attempt to correct the pathologic anatomy Watson Jones described clinically a well defined sulcus beneath the lateral malleolus such as is noted in figure 1. This patient had had an unstable ankle for two years which was surgically repaired successfully in 1954.

Likewise Watson Jones noted the roentgenographic evidence of trilling of the talus as seen in figure 2. There is loss of parallelism between the atticular surfaces of the talus and tibin with a tilt of the talus in its long axis. This is an indication of rupture of one or more components of the fibular collateral ligament. The anteroposterior view of the ankle is taken with

F m U S Na I Hospital Philad lphus P

stress applied on both the inverted and plantar fleved foot Watson Jones found this necessary in the diagnosis of the less severe sprains If pressure was applied gently but firmly, little or no pain was produced and no anesthesia was required



Figure 1 A well defined sulcus beneath the lateral malleolus is evident

Clayton and associates' reported adequate paralysis of the peroneal muscles by injecting into the peroneal nerve at the fibular head, thus avoiding the possibility of infection of the hematoma, as seen in figure 3 Hutcheson' reported on testing relaxation of the fibular collateral ligament after the local sural nerve block was performed as demonstrated in figure 4 The in jection is made along the lateral border of the fibula, about 3 inches provinal to the tip of the lateral malleolus This latter method of nerve block for the roentgenographic diagnosis of the severe sprain is the one most frequently carried out at this hos pital Others have advocated the use of general anesthesia to accomplish the same purpose

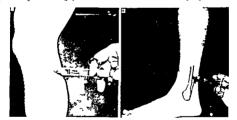
Because of the frequency of this type of sprain in the 18 to 45 year age group, and because of the disability that it produces, especially if improperly treated, it is significant in military as well as civilian medicine

ANATOWY

There are three components of the fibular collateral ligament the anterior talofibular, calcaneofibular, and the posterior talo-



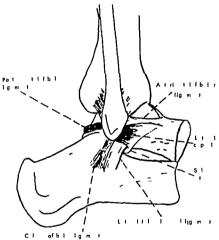
F gur 2 Tilt g f the talus is d m nstr t d the oentg



Fg re 3 P raly is f per ne l mus le ss prod d by j tion f p oneal mero t th head f the f bula

Figur 4. Sur Inerve block is performed by pet gpoc in alog the lite l borde [the final, bot3 nche priximal i the ip fithe litral mille lus cood gill ticke on method.

fibular fasciculi (fig 5) The anterior talofibular ligament, the shortest of the three, is located beneath the overlying capsular tissue and extends from the anterior border of the lateral rial leolus to the neck of the talus. The calcaneofibular ligament, the longest of the three, is the only one which is extracapsular and extends from the tip of the fibula downward and slightly backward to the colliculus on the lateral surface of the calcaneous



gue 5 Diagrammatic representation of the thr e components of the fibula collateral ligament

The third component is the posterior talofibular ligament, the strongest and most deeply seated of the three it extends from the digital fossa of the fibula to the lateral tubercle on the posterior aspect of the talus immediately lateral to the groove for the tendon of the flexor hallicus longus

The anterior and posterior articular capsule is thin, joining the thin and the talus, whereas the lateral capsule is somewhat thickened and found between the anterior talofibular and lateral talocalcaneal ligaments, blending closely with them before passing beneath the calcaneofibular ligament. It extends from the

lateral border of the talus to the medial surface of the lateral malleolus

DIAGNOSIS

Bonnin believes that in the severe adduction strain which has been considered only second in frequency to external rotation violence the calcaneofibular ligament is the first and easiest to rupture resulting in rotation of the talus and that further strain will in turn result in tearing of the lateral cansule and the anterior tibiofibular ligament due to strain on the inner fibula On the other hand Anderson and LeCoca emphasized the importance of the tearing of the anterior talofibular ligament as the primary result of the plantar flexion force of the inverted foot They believed that a tear of the anterior talofibular ligament allows anterior displacement of the talus in the ankle joint mor tise in the coronal plane and rotational displacement of the talus medially on its vertical axis and when there is an associated tear of the lateral capsule roentgenographic study will reveal the talus tilted to as much as 7 degrees. When both the anterior talofibular and calcaneofibular components are involved the talus rotates as much as 12 to 30 degrees in its long axis When all three components are involved the ankle is found to be com pletely unstable Anderson and LeCocq had 3 such cases in the 27 they reported on This compares with our figures of 3 un stable ankles among 24 patients with partially torn fibular col lateral ligaments

As a result of the study made by Bonnin table 1 has been prepared to show the approximate ratio of the degree of talar tilt of the anesthetized plantar flexed inverted foot to the extent of fibular collateral lightwent tear

L gam ruptur d	The lt (dgr)	
A 10 mal fib lar Calca fibula	5 15	
A cortal fb lat d calc fbula A real fbel r	15-30	
l fblar and pre-ortal fbul	30-45	

In a study of 100 men and 100 women without histories of ankle injury Bonnin pointed out that 4 percent of the women and 5 per cent of the men had a bilateral equal congenital variant in antie mobility which he called the hyperrobile ankle in these persons he found a 5 to 15 degree tilt of the talus Because of the danger of underestimating the severity of a sprain, all sprained ankles with this degree of tilt treated at this hospital were immobilized in plaster for 3 to 4 weeks

From 1 January 1952 to December 1954, 73 ankle sprains with out fracture were reported by the orthopedic department of this hospital (table 2) Of these, 24 (33 percent) reverled from 10 to 60 degrees of talar tilt on roontgenographic study Admitting that this percentage is high, we have to assume that there were other mild ankle sprains treated by naval medical officers in this vicinity that never reached our department.

TABLE 2 Reported ankle sprains (U. S. Naval Hospital, Philadelphia Pa., January 1952 to December 1954)

Sprain	Number	Percent	
With fracture Without fracture Mild Severe talar tilt	106 73 49 24	100 67 33	

Nerve block anesthesia was used in almost every one of our reported cases. In the most recent cases, we have taken lateral roentgenographic views of the forced plantar fleved ankle, in addition to the anteroposterior forced inversion, plantar fleved views, but have failed to demonstrate the anterior displacement of the talus described by Anderson and LeCocq

CASE REPORTS

Figures 6 through 8 show roentgenograms of two of our patients to demonstrate different degrees of tilting of the talus Figure 6 shows a roentgenogram, taken without anesthesia, of a severely sprained ankle in which all three components of the fibular collateral ligament are torn Rotation of the talus is 45 degrees

Case 1 This patient was a 41 year old man who fell down a steep ladder aboard ship in 1950 twisting his right ankle in inversion Because his roentgenograms were negative for fracture, he was treated for 3 days with bed rest and an ace bandage before being returned to duty. He then had increasing disability due to instability of the ankle. He was admitted to this hospital late in 1951 and underwent a Watson Jones tenodesis of the ankle.

Case 2 The second case is that of a 19 year old patient whose ankle was sprained in October 1954 when he was kicked on the lateral heel while playing basketball There was a moderate degree of swelling with pain and limitation of ankle motion. The

roentgenograms were ne ative for fracture (fig 7) These views were taken without anesthesia but with the ankle forced in plantar flexion and inversion. The talus is tilted 10 degrees



F gur 6. Roe tgenogram ve ly pr ned kle R tat on of the

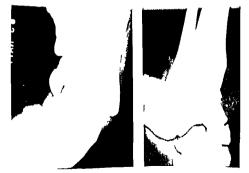
Figure 8 shows the ankle of the same patient under the same circumstances after a sural nerve block was performed Rotation of the talus has now increased to 40 degrees showing the effect pain and peroneal muscle spasm has in these sprains. In the lateral views we attempted to displace the talus forward in the coronal plane but with questionable success This diagnostic sign of Anderson s has not been seen in the few cases we have evaluated in that respect The patient was treated with a short leg walking cast

TREATMENT

Our treatment of lateral ankle sprains has depended on the severity of the sprain and the amount of swelling present In the mild sprains seen early before swelling has occurred at tention was directed toward elevation ice bags for a few hours bed rest and a firm pressure dressing to prevent further swelling and produce temporary immobilization. If swelling already exist-



Figure 7 The talus of this strain f tible f fffire 10 f from 1 fr



F gure 8 Same pair m a in figure 7 after wal nerve ll ch latitlen of the talus has mer a ed to 40 leg es

ed then elevation and support alone was carried out Active rection was permitted by the second day ambulation by the third to sixth day and duty by the tenth day There were some patients who required adhesive strapping with the foot everted or an outer heal wedge

In the severely sprained ankles in which the talus was found to tilt the early treatment was much the same as in the mild cases except that immobilization was continued Of the 24 severely sprained ankles reported on 6 were originally treated elsewhere as mild but disability continued in 21 of those patients we immobilized the ankle with a short leg plaster cast with walker for from 3 to 6 weeks Because of the frequency in change of duty stations the follow up studies have not been satisfactory however no recurrences were revealed

Of the three patients with chronic subluxed ankle sprains one was transferred without treatment to an Air Force Hospital be cause of a disposition problem. The one whose roontgonograms have been shown (fig. 6) received surgical treatment 2 years following his injury. The third patient whose tailus tilted 40 degrees (fig. 8) also received a watson Jones tendesis 1 year ago. Figure 9 is a recent roontgenogram of this patient s anklo using sural nerve block anesthesia and forced inversion plantar flexion of the foot. The talus now shows hardly a trace of tilting and the patient is performing his full duty despite occasional screness over the lateral malleolus after long walking and standing Roentgenograms now show no evidence of a talus tilt.

It has been reported that acute cases of complete tears of the fibular collateral ligament oftentimes will not heal with conservative plaster treatment. In these cases Anderson and LeCocq believe that surgical intervention is justifiable as the primary treatment if the patient is placed in the hands of surgions trained in this technic Plaster immobilization followed by peroneal exercises and a lateral heel wedge has seemed ade 9 ten our experience.

SUMMARY

the use of roontgenograms of both the inverted and plantar fleved foot to determine the severity and nature of the sprained ankle has been emphasized it has been shown that the degree of sprain is more accurately demonstrated if pain and peroneal ruscle spasm is reduced or eliminated To accomplish this several methods were monitioned however the orthopedic department at this hospital has found either the peroneal or surnerve block to be adequate Forward displacement or rotat talus or both is diagnostic of a severe strain in or the loss of man-hours at work disability and even



F gure 9 Same patient as in f gures 7 and 8 showing essentially no 1 ling of the talus

charge from the service through improper treatment, it has been suggested that the aforesaid knowledge of the sprained ankle be more widely disseminated to those of the medical profession less familiar with its seriousness When this is accomplished, early diagnosis and proper treatment by the physician will greatly reduce the disability resulting from such a common injury

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A NEUROLOGIC SYNDROME OCCURRING DURING TREATMENT OF AIR EMBOLISM

IACK L KINSEY C mm nd (MC) IISNR

THE problem of air embolism in a submarine escape training tank was presented in a previous estate. be confined to the presentation of two cases that demon strated neurologic symptoms with observations during treatment

CASE REPORTS

Ca e 1 This m n w s undergo ng training in free scent at the submarine e c p training t nk at this submarine b se He surfaced f om a 100-foot f ee ascent w th no app rent difficulty except for being hort of air and needing a little lift to overcom neutr I buoyancy c us d by blowing our too much r during the scent He had been topp d t 50 feet by e of the instructors when he w ps ng his bubbl s (e scending f ster than the bubbles of his hal d aur) and was sign led to exhale m re rap dly which he did On urfacing he swam to a ladder of med out not walked distince of about 50 f et Following this he c mpl ined of we kness in his I g and of feeling funny His knees buckled he I ughed in pp pri t ly r p dly bec m confused nd collapsed H w carred to the elevat r a d into th recompr ion chamber where he was under a cre ed pressur within 3 m nutes of the o et of symptoms

At a pre e equivalent to 165 feet of wat r he w s completely r lie ed being able to stand walk and pe form all movem ne of the lower xtremitie. In ddit n he was well oriented and em tionally ont in d After 30 minutes he was st rted up u ing table 3 of the U.S. N. v.Tr. atment T ble for Compre sed Air Illness. His condition tem in d t factory until bout the seventh hour at the 30-foot stop (abo t 10 h urs f m onset of symptom) At th s t me gradu I weakne s of the I wer at mities and urinary t ation developed. In view of the evere cur c of symptoms h w g n tec mp sed to depth qu val nt npe ure to 165 feet of w ter

After 2 h urs at the depth with o relief it was belled that edema of the spinal c d resulting from the original trauma w s the ba : for his symptom dh ws titt dup usi g table 4 of the treatment table Duri g th 38 hour d compt ssi n on this table the patient m de

FmUSN IMdialR arh Lbo ory USN ISubmari Base New L nd n, Co n. C mdr K y now goed Staff, C mma ub aris Squadro F FP(San F is Calif

gradual but incomplete recovery. Voluntary movements returned to the lower extremities and increased muscle strength was noted. The patient was able to stand with a little help and walked out of the chamber with assistance. He was admitted to the base infirmary and observed and treated there for 3 weeks. Treatment consisted of administration of antibiotics regular catheterization to prevent bladder complications physiotherapy and general supportive measures. When he was discharged to duty residual neurologic signs were minimal.

Comment In considering the cause of this clinical picture it must be noted that the man was not only overexposed by 5 min utes to a depth of 112 feet (according to the U S Navy Standard Decompression Tables') but he also was traveling ahead of his bubbles for a short period at about 50 feet. The differential diagnosis between decompression stickness and air embolism could not be definitely established, in fact, it could have been other or both, with central nervous system involvement in the spinal cord and brain.

Case 2 This man was being trained in free ascent. On a previous day he had successfully completed two 18-foot and one 50-foot free ascents. His 50-foot ascent was not technically perfect as he apparently expelled too much air and being of almost neutral buoyancy had to have some help reaching the surface. On the day of his accident he was scheduled to make one 50- and one 100-foot free ascent. He left the 50-foot lock and started his ascent in a proper manner. At about the 35-foot level however his rate of ascent accelerated. He was signified to exhale more rapidly and the instructor attempted to hold him. He slipped from the instructor's grasp and ascended rapidly until another instructor dropped from the surface stopped him at the 15-foot level held him until he had expelled all the air possible and then helped him to the surface. On reaching the surface he answered affirmatively when asked if he felt all right and immediately collapsed into what appeared to be a tonic convulsion.

The man was carried to the recompression chamber and pressure was begun less than 2 minutes from the onset of symptoms Due to a misunderstanding he was recompressed to a depth equivalent to 180 feet of water. This took 2½ minutes. He regained consciousness almost immediately During the period of recompression the right arm and both legs were rigid and the left arm was flaccid. After 1 minute at the 180 foot level the tonic contraction of the muscles of the right arm and both legs subsided. At this time the left leg was definitely weaker than the right and the left arm remained flaccid.

He was kept at this level for one half hour then brought to the 165 foot level where it was decided to decompress him using table 4 of the treatment tables. The muscle strength of the left arm and leg returned gradually and about an hour later voluntary control of the left arm and leg returned including fine movements of the hand and firm

gers. An area of hypesthesia invol ing the entire left arm nd shoulder was noted at this time. The tendon reflexes were bilaterally equal and within physiologic limits, and no pathologic reflexes were elicited.

About 4½ hours after treatment began and at the 60-foot level the patient noted some difficulty in loc ting food on his plate. Neurologic ex min tion of sclosed the left exit on ties to be somewhat weaker than the right and the r ndon reflex s l ss reactive than the right. There hours later the weakness had incressed markedly. He we smable to stand because of we kness in the left leg and while itting would drift to the left. Subjective ly there was the compilint of numbress in the left arm and shoulder which corresponded to the area of hype the in noted arlier.

In the light of the pt vious experience with neurologic air embol sm and because the recurrence of symptoms wa not severe the decision a m die to continue with dec mpression according to the treatment table (table 4). At the n xt stop (50-foot 1 vel) the left side weaknes gradually reded and 3 hours later the patient wa ble to stand unaided. Impovement continued ind on raching the surface he h d app ently completely recovered neurologic lly. He was observed the tat nhospital fr 2 d y and dich riged to d type.

Comment From the standpoint of the mechanics involved in air embolism it was interesting to learn from later discussions with the nationt that he was aware of his increased rate of ascent and the need to exhale more rapidly He stated that he was conscious of his previous failure to complete his 50 foot ascent because of exhaling too much and to counteract this inspired as deeply as possible however in spite of the knowledge that he was passing his bubbles and a feeling of increasing tension in his chest he could not increase his rate of exhalation. In other words he was ascending so rapidly that the rate of expansion of the air in his lungs was increasing to the point that a relative expiratory bottleneck apparently developed and his maximum rate of exhalation was insufficient to reduce the intrapulmonic pres sure The basis for the bottleneck may be a change in configuration of the tracheobronchial tree similar to that which was reported by Ross as occurring during coughing

DISCUSSION

Two patients have been presented one with decompression sickness and/or air embolism and one with air embolism both of whom exhibited findings indicative of serious central nervous system damage

The initial neurologic conditions were relieved in both instances by recompressing the patients to a pressure oquivalent to a depth of from 165 to 180 feet of water after which they were slowly decompressed according to the U S Navy Treatment

Tables 3 and 4 After from 5 to 10 hours of decompression treatment the original symptoms reappeared markedly in case 1, and quite middly in case 2 The first patient was recompressed to 165 feet a second time, with no improvement after 2 hours at this depth, and was again decompressed slowly (table 4) with gradual improvement The second patient not only was not recompressed a second time but, in view of the relatively mild recurrence of symptoms and our previous disappointing experience with recompression in the first patient, was taken to his next decompression stop (50 feet) with no apparent deleterious offects

It is postulated that in both of these patients the recurrence of neurologic signs was determined by localized edema in response to the original trauma. Hemorrhage was considered unlikely in view of the relatively transient nature of the recurrences. In case 1, the severity of the signs were at least partially accounted for on the basis of the spinal cord involvement and the small volume available for expansion in this area before marked impairment of function ensued in case 2, the relatively mild recurrence could be attributed partially to a greater volume available for expansion before pressure impaired function, and possibly to a less severe involvement originally.

The lack of response to the second recompression in the first patient and the improvement without further recompression in the second suggests that recurrence of bubble formation was not the symptom-producing factor involved

It must be pointed out that in casualties of this nature there is no diagnostic procedure which can differentiate the symptoms due to recurrence of bubble formation from those of localized edema except the response or lack of response to changes in ambient pressure. In doubtful cases, or in those with sovere recurrences, it may be best to recompress in accordance with treatment tables it may be best to recompress or possible complicating brain or in those with mild recurrences or possible complicating brain or cord injury however, it may be advisable to proceed with decompression for at least one or two stops with the patient under pression for at least one or two stops with the patient under careful observation. If there is no further deterioration in conductangular distinctions of its improvement begins again (as in case 2) it can be assumed that the recurrence of symptoms is not due to bubble formation and the decompression can proceed in routine fashion

SUMMARY

During treatment of neurologic types of decompression sick ness and air embolism in two patients the initial neurologic symptoms recurred to a greater or lesser extent from 5 to 10 hours after the original trauma. These symptoms were not affected by changes in the ambient pressure.

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THE EXECUTIVE

As everybody k ws an executi e has practically noth ing t do e cept to

- 1 Dicide white to be die
- 2 Tell someb dy to do it
- 3 Li ten to eason why it huld not be d why it should be done by someon else o why it hould be done 1 a diff ent way
 - 4 Follow up to e whether the sheen don
 - 5 D sco th t thas n t b en done
 - 6 I quire t why
- 7 L sten to cuses from the person who h ld h ve done it
- 8 Follow up gin t see whether the thing h s been do e only to d cover that this bin done inc meetly
 - 9 Post thowseshuld have been don
- 10 Co clude that as long as it ha been d e it may well he I ft where it is
- 11 Wonder whethe it is n t tim to get rid f a person who c nnot do a thing right t reflect th t h prob bly h s a wife nd a lage family nd th t certa nly his successor would b just s bad and maybe worse
- 12 C s der h w much mpler a d better the thing w uld have be n done if on h d d e to eself in the fi st place
- 13 S dly refl ct that on could ha e d n t right in 20 minutes and as the gs turn dout o e has to pend two dy to fido t why the staken thre we kee fo som body else to do it wro g

-OSSINING ROTARY CLUB New Y k | nal | M d m 1 15 1954

PSYCHOPATHOLOGIC REACTION PATTERNS IN THE ANTILLES COMMAND

MAURICIO RUBIO Major MC USAR MARIO URDANETA Captain, MSC USAR JOHN L DOYLE First Lieutenant MC USAR

A GROUP of striking psychopathologic reaction patterns, precipitated by minor stress in persons with well defined char acter disorders, has been observed in a limited section of the insular (Puerto Rican) personnel of the Antilles Command Because of their clinical resemblance to more serious conditions such as schizophrenia and epilepsy, these behavior disorders present a problem in medical management and administrative disposition

In order to analyze the components of these reactions, all of the outpatients and the medically evacuated inpatients seen at this hospital from 1 January to 31 December 1954 were studied A total of 998 outpatients was observed, of which 517 were insular military personnel Sixty one inpatients were evacuated through medical chapmels.

PATTERNS OF REACTION

The most outstanding reaction pattern is characterized by a transient state of partial loss of consciousness most frequently accompanied by convulsive movements hyperventilation moaning and groaning profuse salivation and aggressiveness to self or to others in the form of biting scratching or striking, and of sudden onset and termination Less often there is complete flaccidity The duration varies from an isolated crisis of a few minutes to a series, lasting a few hours in the convulsive form and up to two days in the flaccid variety The reaction produced by the episode in the immediate environment appears to directly influence its duration the greater the secondary gains, the longer it lasts The crises are quite spectacular and when they take place in the company area or at home they cause great alarm and confusion to those around the patient and in some instances, immediate remov al of the source of stress They also bring considerable attention and special privileges to the patient and when he is brought to the hospital and placed in seclusion in a cool, semidarkened room his symptoms usually subside in a few minutes

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The degree of dissociation from the environment is never complete and the patient evidences some awareness of his surround ings especially when he believes that he is not being observed He is also careful to avoid sustaining serious injury, and at the onset of the crisis finds a bed or falls gradually to the ground Upon termination of the crisis he claims complete amnessa for it often appears more alert than prior to it and expresses a sense of relief as though he had experienced an emotional catheria.

Another pattern consists of sudden outbursts of verbal and physical hostility with destructiveness assaultiveness and expression of some persecutory trends During these episodes the patient is markedly hyperactive and noisy but is discriminatory in the type of property he destroys and the persons he attacks. Some of these patients also claim complete amnessa for the outburst naticularly those who face disciplinary action as a result of it. These episodes are of very short duration but repeat themselves often if the precipitating stress is not removed. They are locally known as and de pelea (disease of lighting). The patient is per sonality in the interval between attacks shows only the traits of the character disorder to be described later.

A third pattern is manifested by transient regression to infantile emotionality and behavior has a rapid onset and lasts up to a few days The patient sobs and cries freely assumes an attitude of complete helplessness and tends to depend on others in a childlike manner His speech is characteristically infantile and the over all picture gives the impression of mental deficiency. On occasions he is found adopting fetal positions Ordinarily the clinical picture disappears overnight and the patient awakens entirely free from symptoms and with a good recollection of his past behavior. There is usually a feeling of relief and well being similar to the one observed after the pattern described earlier.

Pseudosuicidal attempts constitute the fourth clinical modality found in some of these men. Superficial scratches on the antenior aspects of the wrist forearm and chest carefully inflicted with razor blades fountain pens or pins are the commonest means of self injury. The ingestion of rat poison or disinfectants mixed in drinks and attempts at handing are also frequent. All of these attempts are made in a dramatic fashion in the presence of various people who can easily intercept the act Many of them occur at home while on pass and the patient makes a histrionic an nouncement of his intentions to his family.

A last pattern of reaction considerably less striking than the previous four is characterized by mild dissociation manifested by nability to concentrate forgetfulness loss of interest in personal appearance some de_ree of preoccupation and slight flattening of affect it usually lasts one or two days

These clinical reactions do not exclude one another, on the contrary, two or more varieties may be found to occur in the same person at different times

PRECIPITATING FACTORS

Some types of minor stress that precipitate the above patterns of reaction include induction into the Armod Forces, transfer from induction center to basic training camp, experiences in basic training particularly the weapon familiarization, infiltration, and combat courses, prolonged hikes stand by details that prevent going home on pass, minor reprimends from officers and non commissioned officers, and alerts for overseas shipment and routine overseas duty. It is of interest to note that the prospect of discharge from the service at the completion of a tour of duty and the consequent return to a smaller income and lower living standards are also important precipitating factors.

A careful survey of the psychiatric histories of these patients reveals remarkable similarities in the genetics and dynamics of their personalities. The first and most outstanding feature is a strong maternal attachment and dependence which is not produced or encouraged essentially by overprotective or overpossessive maternal attitudes as is the case in more sophisticated groups. but which is passive on the part of the mother and passive aggressive on the part of the child The patient often verbalizes this attachment by expressions to the effect that he will never marry as long as his mother is living because Mother always comes first," et cetera. At times it acquires such extreme proportions that the son sleeps in the same bed with the mother up to the time of induction. This attachment continues even if the patient marries and becomes responsible for severe interpersonal problems and conflicts of lovalties. It is not unusual to find that the patient brings his wife to live in the parental home, or that on weekend passes he goes to visit his mother first

A second element in common consists of a lack of proper identification with the father or with an adequate masculine figure I his is based on the father's equally dependent, inadequate person ality The usual findings indicate that he stopped working during the patient searly childhood or even earlier, because of a minor injury or ailment, or that he has abandoned the family, or that he drinks to excess and works sporadically

The environmental conditions under which some of these put sons have been brought up-with little influence from the highly competitive culture, satisfied with slight scheduled with such as harvesting sugar cann or nonliteral at Irall, living the R very small income—form the third contain feature in the but parameter of these patients in the early part of this highly is present that the persons brought of in their transporting formed the great

majority of those affected. As the observations proceeded how ever it became evident that a fairly large group of patients lived in a large community such as San Juan yet were amazingly con fined to a very small section of it almost entirely removed from the cultural progress of the city. Exceptionally these reaction patterns have been observed in persons of the social middle class whose strong maternal attachment and weak masculine identifications were prominent.

Typical histories revealed that these patients showed the predominant reaction pattern or a mixture of patterns from their adolescent years or earlier while under such minor stresses as being reprimanded by a parent or schoolteacher $a\tau_{\rm c}$ uing with a girl friend or watching a street fight or other display of hostility usually had a record of difficulties with the police Because these reaction patterns had occurred from childhood or adolescence—under minor stress always episodically followed by complete spon taneous remission of the symptoms and with only the hysterical personality traits present during the intervals—they were clearly outlined as character disorders in contrast with those suffering from acute dissociative reactions these patients showed no neurotic symptoms except for these transient reactions

The character disorder resulting from these factors was that of a hysterical personality marked by (1) Emotional instability (2) extreme but essentially passive dependency needs that acquired a hostile aggressive character when there was a threat of loss of their source of dependence (these needs however were easily transferred from the mother to an institution like the Army the hospital at cetera) (3) marked sensitivity with great inability to tolerate pain criticism punishment or any other form of rejection (4) suggestibility and (5) psychosexual immaturity

PROBLEMS IN MANAGEMENT

The person with this type of personality is particularly predisposed to cling to secondary gains such as those obtained from hospitalization. He does not want to return to duty and insists that he should be cured or given a pension because he will never be the same again. In view of this tendency a complete social history was taken on arrival at the hospital and before the patient was actually admitted in this manner it was possible to obtain a detailed account of any psychopathologic condition existing prior to enlistment because 1 or 2 days later the patient would give a totally different version emphatically denying any symptoms before induction.

The admission of such patients was strongly discouraged and the advantages of handling them on an outpatient basis were explained to the medical and administrative personnel of the hospital and various dispensarios. Lectures on the nature and management of the more spectacular reaction patterns were delivered to all officers and to the first sergeants of the basic training center of this Command. The result was a considerable decrease in the inpatient load in the course of the 1 year period used for statistical studies. The average number of admissions per day in January 1954 was 45 3, in the following December, excluding the holiday period, it was only 13 6. When admitted to the hospital these patients were only kept for the necessary period of observation and promptly returned to duty while awaiting disposition, before the attachment to the more protective atmosphere of the hospital could take a firm hold

Many of these patients were referred to the hospital on an emergency basis as psychotics and in view of the bizarre, acute manifestations were considered to be very dangerous to them selves or others. With the assistance of the above-mentioned lectures however, the understanding especially of the line officers and enlisted personnel, improved greatly during the past 17 months.

Of the 517 insular military personnel, 281 were diagnosed as having character disorders, 202, or 719 percent of these, presented hysterical personality reactions as seen in table 1 Electroencephalographic studies were made in 29 of the 31 patients with partial loss of consciousness (group 1), normal tracings were found both awake and asleep Sixty patients did not have a complete grammer school education 47 had finished the eighth grade

Group	Reaction	Number	Percent
1	Partial loss of consciousness	31	15 3
2	Crises of hostility	50	24 8
3	Transient regression	23	11 4
4	Pseudosuicid lattempts	19	94
5 Mild dissociation Total	79	39 1	
	202	100 0	

TABLE 1 React on patterns n 202 pat ents with hysterical pe sonality

Although the majority of the patients under consideration (124 out of 202) showed the typical reaction patterns during the course of basic training or before others developed symptoms in the period of pre embarkation leave or while assigned to duty in Puerto Rico

The commanding general has designated the chief of preventive medicine as special assistant on a Center level. This status plus chatmanship of various Center committees such as the Safety Committee provides the preventive medicine officer with information and authority of action directly responsible to the commanding general.

The following outline further indicates the individual personnel participating in the Center's preventive medicine program

ORGANIZATION AND PERSONNEL

1 Chief of Preventive Medicine (Assistant to Commanding General (Deputy Hospital Commander

a Assistant to Chief

h Health Nurse

The chief of preventive medicine has an assistant chief (a Medical Service Corps officer) A health nurse two sanitary technicians and a secretary are authorized

The remaining partial list of officers and services demon strates the flexibility of the organization pattern and the spread of responsibility for the specialized programs

- 1 Epidemiologist (Chief of Laboratory—Hospital)
- 2 Venereal Diseases (Chief of Dermatology-Hospital)
- 3 Communicable Diseases (Assistant Chief of Medicine— Hospital)

4 Home Care (Chief of Outpatient Service)

- 5 Consultant (Chief of Preventive Medicine Division Army Medical Service Graduate School)
- 6 Maternal Health (Chief of Obstetrics and Gynecology— Hospital)
- 7 Children s Programs (Chief of Pediatrics-Hospital)
- 8 Nursing (Chief Nurse-Hospital)
 9 Safety (Center Safety Officer)

PERSONNEL USED ON THE HEALTH NURSING SERVICE

The following outline shows personnel directly assigned for health nursing activities and additional personnel utilized on a student voluntary or co-operative mutual interest basis

Assigned personnel

One Public Health trained Army nurse One enlisted sanitary technician

Student personnel

Dietetic interns
Advanced obstetric nursing students
Clinical technicians

Guest speakers

Volunteers

Red Cross Volunteers

Visiting Nurse Association

Liaison

District of Columbia)

health agencies

Virginia

The development of the Health Nursing Service Program at this Center began by establishing a "goal" and by the use of certain procedures The goal was to promote the outpatient service as the health center whereby preventive health activities, both on the post and in the community, could be co-ordinated to serve the best interests of the command

The procedures used were (1) co-ordination, use, and education of the professional staff, (2) evaluation and strengthening of existing programs, (3) establishing new programs as the need and facilities arose, and (4) maintaining liaison with local com munity agencies

The need for "support of command" should be emphasized This is essential in order to obtain personnel, facilities, trans portation, and support of program operation Command support permitted an organization that would interrelate activities of the Center such as outpatient clinic, professional services of the hospital health nurse, and off nost health facilities

By showing the possible benefits to be derived from the Visiting Nurse Association, the professional staff were educated to use this organization

A further procedure was to evaluate and strengthen such existing programs as the venereal disease program and the maternal and child welfare program

The health nursing service programs initially centered on additional service in maternal and child health primarily one of health education centered within the outpatient clinic and obstetric wards of the hospital

The program consists of

1 Group interviews of new obstetric and gynecologic patients Until September 1954 new obstetric and gynecologic patients were interviewed in groups by the health nurse during their first visit to the climic. The primary purpose of these interviews was to answer the patient's questions and live brief instructions on the hygiene of pregnancy 34 0 5

- 2 Individual new obstetric and ownecologic interviews. This method adopted in September 1954 has proved to be more satisfactory than the group interview. The purpose of these inter views is to establish rapport answer questions introduce the patient to Army health nurse service facilities make referrals and to invite both husband and wife to attend the parents classes
- 3 Orientation conference with new obstetric and gynecologic patients The so-called new obstetric and gynecologic orientation conference has largely substituted for the original group inter view On the second visit to the clinic interviews are conducted with small groups of patients The health burse describes and explains the physical examination to be given by the obstetrician and patients questions are answered or presented to the obstetrician
- 4 Classes for expectant parents The classes for expectant parents consist of a series of five 2 hour evening sessions held once a week The series is receated every 5 weeks Before and after each class and under the supervision of the health nurse the students practice the baby bath procedure During each class period an appropriate film is shown Guest speakers (dietician psycholo_ist, dentist) are scheduled for two sessions. The lecture discussion method is used in teaching Anatomic charts models posters pertinent health literature and layette equip ment are used as aids
- 5 Visits to postpartum patients on obstetric ward Twice each week the health nurse conducts a class with postpartum patients on the obstetric ward in which the baby bath procedure and formula making are introduced Patients questions are answered or referred to the ward physician Patients' e pecially primiparae are encouraged to use the visiting nurse service
- 6 Visits to postpartum clinic The health nurse is present in the postpartum clinic to encourage patients to contact her about their health problems. Discussions are mostly about child care and office visits to discuss individual problems are en couraged The health nurse s office is located in the outpatient clinic to promote availability
- 7 Premature infant home evaluation Premature infants are given special attention when referred by the pediatrician Home investigation visits are made by the visiting nurse prior to the discharge of all premature infants and a follow up visit is made after the baby a discharge from the hospital
- 8 Child health The usual well baby clinic and immunization program are conducted The health nurse s part in this program is to invite and encourage mothers to bring their babies to the appropriate clinic conducted by the pediatric service

- 9 Follow up file A "follow up" file has been developed on babies whose mothers had a positive test for syphilis on cord blood in order to make sure the baby has repeated blood testing and physical examination
- 10 Health education films Movie films of an educational nature are shown in the outpatient clinic twice a week during the lunch hour After the films are shown, a guest speaker discusses the subject of the film with the audience which is composed of military and civilian professional staff members and lay employees Notices of the film showings are placed in the Daily Bulletin of the Center Films are similarly shown in parent classes
- 11 Student training The dietetic interns attend one parents class as part of their training The advanced obstetric nursing students receive 10 hours instruction in the public health as pects of maternity nursing, as well as supervised experience with the health nurse The advanced medical technicians assigned to the obstetric service attend one postpartum class
- 12 Health literature Selected pamphlets, drawn from the stock of 69 different free pamphlets supplied on request from 11 different Federal, community and voluntary agencies are available in appropriate locations in the outpatient service and are distributed during parents classes and lunch hour programs
- 13 Community agency referrals Civilian health program referrals are on an experimental plan for 6 months with the District of Columbia Visiting Nurse Association for the purpose of promoting better health and reducing absenteeism among civilian employees. The service is limited to food service and auxiliary nursing service personnel (440 persons) Referrals are made on a sick pattern basis and on the request on the employee. The cost of the initial visit is borne by the Visiting Aurse Association Additional visits are charged in accordance with the Association s policies. The trend has been for employees to return to work in less time than their sick patterns had previously indicated.
- 14 Social service referrals Most of the referrals to the medical social work service for casework result from interviews with new obstetric and gynecologic clinic patients
- 15 Visiting Nurse Service referrals. At present, referrals are mainly of postpartum, newborn and pediatric patients. It is planned to extend the service to all patients in the home care plan, particularly to those in the geriatric group. Included in the liaison visiting nurse service are the groups from surrounding counties. All referrals are made by the attending or ward surgeon through the Army health nurse. The Cancer Society also pays the Visiting Nurse Service for certain visits.

- U S ARMED FORCES MEDICAL IDURNAL
- 16 Red Cross parent classes The District of Columbia Visiting Nurse Association and the Red Cross hold parent classes Expectant parents who are unable to attend parent classes at this Center are referred to these classes
- 17 Tuberculosis and venereal disease survey An annual screening of military and civilian personnel for tuberculosis and syphilis has been initiated in conjunction with the District of Columbia Tuberculosis Association and District of Columbia Health Department, There were 68 persons with positive serologic teactions for syphilis in the June 1954 survey. The chest-film follow up statistics were not completed
- 18 Center activities The health nurse serves in an advisory capacity to the Center s nursery. The health nurse confers with chiefs of services and attends professional conferences on the same basis as social service workers and psychologists
- 19 Leason maintained Contacts which result in additional services for our patients are maintained with the District of Columbia Health Department U S Public Health Service Dis trict of Columbia Visiting Nurse Association and Visiting Nurse Association of adjacent areas Montgomery County Health Department and United Community Service

PROGRAMS PLANNED AND UNDERWAY

Programs planned and underway are

- Home Care Program—to be extended to include all services of the hospital
- 2 Diabetic Education Program—individual and group instruction
- 3 Arthritic Education Program-individual and group instruction
- 4 Mental Hygiene Program-to be started by the Neuropsy chiatric Department in the form of child study groups
- 5 A Child Development Service-to present a series of seven films on Child Development" during the lunch hour film program
- 6 Research in the study of prenatal influences as they relate to the mental stability of the child has been added to the Health Aurse Program in conjunction with personnel from the National Institutes of Health

SUMMARY

The Army health nurse is a valuable asset to patient care. The services performed or offered are limited by the personnel and facilities available The outline of the organization and the program of the Army health nursing service at Walter Reed Army Medical Center serves only to show the potential service available. The pattern of service used is unimportant, but it must embrace the essential elements of a sound preventive medicine program, which is equally important at Army Class I II, and III installations. This program not only saves the physicians time and reduces the number of patient hospital days but also supplies nursing service and health education. The health nursing service is centered in the outpatient service as a focus of operation.

THE MAGIC T I D

An example of the survival of magic in the medical routine of today is the ritual of giving drugs three or four times a day. This ritual as a Swedish psychiatrist. Ada Glynn commented on not long ago has been handed down to us from the time of primitive medical magic. For the medical historian, this custom of giving drugs three or four times daily is associated with primitive belief in the power of certain mystic numbers. The ancient Egyptians believed in a four day cure. On the island of Eddystone every form of therapy, lasts four days and sometimes is repeated for four days every month for four consecutive months.

If we were to study pharmacologically the advisability of giving certain drugs three or four times a day and take into consideration the duration of the effect of each dose we should see with surprise that in many cases there would be an overdosage and in others an underdosage entailing in either case a great risk. Just the same physicians continue to follow the practice of the three daily doses

The administration of a drug is maintained within a certain margin of therapeutic dosage. But patients with totally different constitutions are given exactly the same dose. If the desired effect is not achieved another drug is tried when actually what should be done is to determine the correct dosage required by each patient before deciding—in cases of poor toleration—that it should be discarded. The magical formula of t. d. d regardless of the patient s capacity to absorb or excrete the drug sometimes makes the patient intolerant to drugs administered at short intervals.

-FELIX MARTI IBANEZ M, D in A tibiot c M d cine p 406 July 1955 recorded temperature was 6 C Furthermore no hemolyzed blood was reported during the month of September from any of the other three participating activities

STRUMARY

The Blood Donor Center at the U S Naval Hospital San Di e o Calif has been supplying whole preserved blood to all naval activities of the Eleventh Naval District The results show that it is practical and economical in the military service for one large donor center having an adequate supply of donors available to draw and process the blood requirements for the entire district. The blood can be transported a considerable distance by automobile with a minimum loss of quality due to hemolysis of the red blood cells

EVACUATION BY HELICOPTER

In the r cent Korean campaign th lesson of which at being studied here and in the U S A evacuation has been further speeded and eased by me as of helicopter which have pr ved far uperior to the stretcher jeep and mule Ev cuation by the method has no doubt been one re son for the remark bly low d thrate f the American wounded (2 t 3 percent comp red w th 4 to 5 percent in the second world war) and the U.S. Army Med cal Service has dec ded to include the helicopter ambulance unit as an int gral part of its full organ zation. The helicopter have et is useful only in suit ble weather and as n Korea with undisputed mastery of the air-condit one that will not a cessarily prevail ag in

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MILITARY MEDICINE IN PEACETIME

Some Unusual Cases

JOHN CONLEY Lieutenant (MC) USNR GEORGE G GRAHAM L eutenant (MC) USNR RALPH E HAYNES Lieut nant (MC) USNR MOR I McCARTHY St Lieutenant (MC) USNR

In VIEW of the rather widely held opinion that medical services in the field have little or no redical work of value to do following cessation of hostilities, the following case reports are presented in refutation. These cases were all handled successfully entirely within the Western Pacific field installations of the First Natine Division's Medical Battalion.

CASE REPORTS

Cose 1 A 24 year-old horean man complained of weakness and numb ness of both legs For 4 months he had noted progressive weakness and loss of sensation in both legs with loss of bladder and rectum control. His gait became unsteady finally resulting in an inability to walk. During the same period he also had noted moderate shortness of breath and a frequent cough productive of foul smelling sputum. One month before onset he had been treated for pleurisy: peritoritis had been suspected 6 months earlier.

Physical examination revealed some distention of the abdomen with a moderately enlarged liver. Neurologic examination showed a spastic paraplegia with loss of tactile sensation in both legs. The rectal tone was poor Laboratory studies revealed normal blood and urine. The stool was positive for ascarides and Trichuris trichium. A roentgenogram of the chest showed pneumonic infiltrate in both right and left midfields of the lungs. Myelitis at the level of T.4 cause undetermined was suspected.

A laminectomy was performed on 23 October 1953 at the level of T 4 In the epidural space centered in the midline was a granuloma tous mass with a center consisting of black oily liquid this granuloma was excised Numerous cysts of Paragoniums westermani were found

Four days postoperatively a pleural effusion developed that proved to be sterile Recovery was uneventful 2½ months after operation there was return of sphincter function motor power and sensation and the patient was able to walk without difficulty

F m Medical B ttal o I t Mar ne D isso (R nf) FMF P cific FPO San Francis o Calif D C nl y is ow t 1111 N B cadway Sa ta Ana Calif

Cose 2 A 13 year old korean boy sustained an injury from a bicycle chain 3 weeks prior to admission. The injury was smill abraded area on the heel which was not cleansed or dressed Five days before ad mis ion he developed pain about the face neck and abdomen and beg in to have difficulty swallowing For 4 days he had convulsions and increasing trismus. He was then treated by a Kore in doctor being given three injections but filed to improve

Physical examination revealed a well dev loped and well nourished kore in boy who appeared acutely ill T inperature w s 100 2 F pulse 120 per min. and blood pres ure 110/60 mm Hg. The child face w flushed he was un ble to open his mouth and the upper I p w tightly dr in over the upper tet the grag the ppe rance of typ c I rissus sardonicus. The neck and abdomen were rigid all muscle groups were spa modic and opi thotonous w s ever. The pare in was c scious but highly excitable. He was then having recurrent contract ins of various muscle groups but no true convulsions. The kin w covered with gr in utricaria which had d veloped after the injections g ven b fore admission. The rem i der of the ex mination we negative except fo a dryuler about 4 by 4 cm on the I ter I part f the left heel. The left inguinal lymph node we e enlarged in tender.

The pat ent was admitted with diag os s of tetanus. L bor tory stud s sh wed the r d blood c ll count to be 2.26 per cu mm in the hemogli b n to b 64 mg or 9.5 gr ms p r 100 ml. The white blood cell c unt was 6.550 p r cu mm with a n small differ nt 1 Findings of uri 149s; were within normal limits A lumbar tap seve led the pinal fluid to b crystal clear with normal miss A mich there were or d blo d cells and 6 white blood cells Sug r was 82.5 mg protein 20 mg in delhorides 72.5 d mg all per 100 ml

The p t nt was g ven a sedat ve The w und w widely excited and deb ded nd contin ous hydrogen peroxide p cks were st rted Cryst lline penicillin 180 mg (300 000 units) were pi en every 2 hours and ner ve ous infusions were st red Because a skin test with hor e s rum was strongly positive the p tient was given 50 mg of corto e (br nd of cortisone acetate) intramuscularly and was slowly de nsitized. He wa then slowly g ven 40 000 units of tet nus antitoxin ntravenou ly w thout any untoward reaction After the intraveno s infusions the p ti nt seemed to be mp ved although his conditio rem ined cr t c l The following d y he appeared to be definitely improved alth ugh the accumulat on of thick mucous secretions in the pharvnx r main d a probl m and n two occas ons almost necessitated a tracheotomy Improv ment wa gradual but st ady The muscular spasm and read to began to subside slowly but the p tent developed bil t t l to c p ralys s of the extensor muscles f th forearm which slowly improved Twe ty three days after dmis ion the pate t was in go d gener I condit in and it was believed that the paralysis

would completely sub id

Case 3 A 52 year old hotenn woman was admitted on 8 August 1953 complaining of an enlarging abdomen and a mass in the right flank of 4 months duration Dull intermittent pain had been noted for 2 months Other symptoms such as abnormal bowel habits weight loss and excess fatigability were denied as well as any other complaints. The past history was noncontributory and a family history was not obtained A review of systems other than that described in the present complaint was negative. More than a year earlier the patient had noted worms in her stools but had paid no attention to stools since that time

Physical examination was essentially negative except for the fol lowing findings A large firm mass 10 cm in diameter was palpable in the left hypochondrium This extended to the costal margin superior ly and to the midlumbar region inferiorly and laterally the upper border disappeared beneath the costal margin and could not be palpated The mass did not move with respiration but on palpation could be moved through a very limited range (less than 1 cm). No other intra abdominal masses or organs were palpable. There was only minimal tenderness over the mass on deep palpations. No lymphadenopathy was found in the usual areas examined. No hernias were present A clinical impression of carcinoma of the descending colon was formed.

An operation was performed 10 days after admission. The large mass was found to be in the abdominal wall penetrating through and com pletely adherent to the splenic flexure of the colon. A wide resection of the abdominal wall was carried out including the 11th and 12th ribs and a portion of the diaphragm the splenic flexure of the colon was widely resected and an end to end anastomosis performed Com plete abdominal exploration failed to reveal any further intra abdominal abnormality The abdominal wall and diaphraem were closed-the former by swing flaps of the anterior rectus sheath. No attempt was made to approximate the peritoneum because it had been widely dis sected and removed Steel wire sutures further closed the defect. The patient received 1 000 ml of whole blood during the procedure. Her postoperative convalescence was sustained without incident. She was discharged 21/2 weeks later and followed up at the outpatient clinic Subsequent postoperative barium enema roentgen studies have been negative and to date the patient is well and uncomplaining Microscopic examination of sections of the removed tissue revealed a des moid tumor which was intimately attached to the colon

Cose 4 At 0330 hours on 17 October 1953 this 17 year old man was shot with an M I rifle When brought to E Medical Company at 0400 hours examination revealed a compound comminuted supracondylar fracture of the right humerus and what appeared to be a superficial wound of the right flank region. He was not in shock blood pressure and pulse were stable and there was no evidence of artery or nerve involvement A roentgenogram of the chest was essentially normal A roentgenogram of the right arm confirmed the gross findings

Under brachial block the arm was debrided the triceps tendon su tured and a pin placed through the medial condyle. When the patient was rolled on his left is de a d the right arm was elevated for debride ment of the fl nk wound the characteristic sounds of a sucking type chests wound were heard. The entrance wound was located at the right paravertebral margin in the 12th interspace and the exit wound at the 10th inter pace t the metric axillary level. The wound edges wer inflirt ted with 1 percent novocain (brand of procaine hydrochloride) the 10th rib was exposed and a 4 inch section removed. Examination the revealed that the upper third of the right kindery ind the lateral sixth of the right lobe of the liter h d been destroyed in these was a trent in the right d abbraicam measuring about 2 cm in le eth.

In spite of the opening of the right thorax, the patient's condition remained at ble He was given 75 mg of demerol (br nd of meneridine hydrochloride) intravenously and the surrounding the surroundi were infiltrated with I percent novoca n. The distal third of the right kidney was resected and the capsule closed with interrupted surures of 000 chromic The involved portion of the liver was resected and and bleed; g co tr lled with mattre s sutures of 0 chromic Examin nation of the lu g revealed only a contused right lower lobe. A che t tube was inserted through a stab wo nd in the inter or seventh interpace and connected to underwater drain. The di phr gm was clo ed with interrupted sutures of 00 silk. The intercostal muscles were closed over the r ght pleural defect Drains to the up ahep tic rea and right kidney were bought out through an fradiaphragmatic stab w nd in the right flank. The right arm was placed in a right angle spl nt Th patient's blood pressure pulse and respirat on r mained st ble the ughout the operation

A small amount of bl drained through the fl nk wound for the first 2 postoper tive days A roentgenogram of the chest taken on the second post perative day showed the r ght lung linost completely expanded and the right diaphragm in norm l posit on On the fourth postoperative day second ry closure of the wound was done Subsequently all routine labor tory ex minations were within normal limits and the patient was in excellent condition.

This cise was thought to be somewhat unusual in that a rither ensures wound of the right flank involing the kidney liver ind ling was masked by the musculature of the thoricinc age keeping the wond sealed until the arm was elevated Secondly it demonstrated the typ of major operation that could be accomplished under local a sthesia which while not advocated was adequate under the circ mitances.

SUMMARY

Four unusual cases were observed as part of the day to-day professional care given by a Marine Division Medical Battalion in peacetime These included paragonimiasis totanus desimoid tu mor and an unusual flank wound This is only a small sample of a diagnostically and therapeutically challonging practice



Clinicopathologic Conference

U S Air Force Hospital Wright Patterson Air Force Base Ohio*

DECOMPRESSION SICKNESS

[in view of the nie est n th s unusual case the customary style of a clin copatholog c conf ence has been changed to a mod fed panel discussion.]

Summary of Clinical History At 0825 hours on 19 March 1954, a 34-year old obese Army officer was admitted by ambulance from the flight line with acute semicoma and left hemiplegia Weighing 250 pounds and 5 feet 11 inches tall, the officer flew as a pas senger in a T 33 jet aircraft leaving Langley Air Force Base for O Hare Air Force Base The patient had been briefed concerning the oxygen system and other safety devices in the aircraft There was no preoxygenation prior to take off Take off and climb to 5.000 feet were executed on 100 percent oxygen At this altitude the oxygen was turned back to "normal system Climb to 35,000 feet on course was accomplished by 0845 hours. The pressurized cabin altitude at this time was 26,000 feet. The pilot checked his passenger frequently and received lucid verbal responses until arrival over Wright-Patterson Air Force Base at 1005 hours, where the pilot had to change course and altitude Ascent to 39,500 feet (cabin altitude 29 000 feet) above the clouds was completed in 3% minutes, at which time the pilot noticed that the throttle was jammed and asked his passenger to check it on the rear instru ment panel The officer replied that it was all right, but complain ed of numbness on the left side and coldness. He was advised to loosen his harness turn the oxygen to 100 percent, and check the pressure parts The patient replied he could not see the lastnamed even though told where they were On further questioning it became evident to the pilot that his passenger was becoming progressively more incoherent

These events occupied about 2 minutes at a cabin altitude of 29 000 feet. The pilot called a May Day emergency and started

Col Street W C o USAF (MC) Comma d f m the M d 1 Se C 1

down reaching 10 000 feet in less than 5 minutes and landing in a total of 20 minutes from the time of onset of his passenger s symptoms On landing the patient was unconscious and evidently had been so for some time because the pilot could feel the man s weight on the controls The onset could therefore he placed roughly between the time of jamming" of the throttle and loosening of the patient a harness On landing oxygen equipment and cabin pressurization were checked and found to be in good operating order

Recapitulating the time element. The patient was taken to a 26 000 feet cabin altitude in 20 minutes and ascended to 29 000 feet cabin altitude over a 31 minute period Exposure at this altitude for 2 minutes coincided with incoherence numbries visual disturbance and loss of consciousness Return to 10 000 feet was accomplished within 5 minutes and landing in 90 minutes after onset of symptoms

Physic I Examinate n The pilot the corpsman and the ambulance physician described a red livid obese semicomatose white male who exhibited right-sided convulsive movements in the ambulance but a flaccid paralysis of upper and lower left extrem ities. The patient was extremely restless and required restraint Blood pressure was 180/120 mm Hg pulse 130 per minute respirations 40 to 50 per minute On the ward blood pressure fell to 130/90 mm Hs. Pupils of the eyes were regular equal and markedly dilated (to about 7 mm) funds were normal with no papilledema Tonus of cervical muscle was subnormal There was tachypnea with pronounced abdominal excursions but no positive findings in the lungs There were no heart murmurs and regular tachycardia was present The back and extremities showed no signs of trauma The head and thorax were similarly free from gross signs of injury Neurolo-ic examination showed flaccid left-sided paralysis right-sided hyperreflexia and hypertonicity The Babinski sin was not elicited No other localizing neuro logic sins emerged

L b rat y Studies Examination of cerebrospinal fluid revealed an initial pressure of 112 mm of water no block was demonstrated Fluid was crystal clear and contained 4 neutrophils per cu mm and a total protein of 90 mg per 100 ml The serologic test for syphilis was negative

Course in Hospital Initial clinical impression was to rule out ruptured cerebral aneurysm but air embolism decompression disease was suspected Immediately on admission to the ward the patient was placed on oxygen by mask Because he was breathing so rapidly that there was some rebreathing and incom plete filling this was changed to oxygen by nasal catheter Spinal fluid pressure rose with pressure on either jugular vein and fell

rapidly on release The anesthesiologist attempted stellate block on the right, which did not produce a Horner's syndrome but somewhat increased warmth of the right upper extremity

On neurologic re examination, the superficial abdominal and cremasteric reflexes were unelicitable, and the tonus of the extremities of the right were decreased. The consulting neurologist was telephoned, but in view of lack of a greater degree of local; zation did not recommend further immediate treatment.

The patient developed a pronounced terminal respiratory tract exudate requiring aspiration, and developed a peripheral vasimotor collapse with blood pressure of 0/0, bluish mottling of skin due to stasis and imperceptible pulse Intravenous levophed (brand of levartereno) bitartrate) made with a 16 ml solution in 1 liter was given with no significant response and the patient died at 1555 hours—4 hours and 55 minutes after admission to the ward and about 5 hours and 25 minutes after onset Total dose of levophed received hefore death was 8 ml

DISCUSSION

Doeto Mo sh II When a patient presents symptoms such as these after an airplane ride the number of things that we can reasonably consider are actually very limited I am sure that there are a number of things that you could bring up that are on the back page of the text books However if you are going to find the most reasonable causes I think that intractanial hemorrhage of one type could be the most likely thing other than decompression sickness to consider I think this is pretty well ruled out by the fact that the man had no meningismus he had a normal spinal fluid pressure. The spinal fluid was clear and there was no papilledema I am sure that I am working too much towards bends—I can't give a fair differential diagnosis Maybe someone else would like to say a few words about the differential diagnosis

D to Dow y You might wonder whether the altitude of the cock pit which was 26 000 feet for 1 hour and 20 minutes would be sufficient to cause decompression sickness I know of only one case of decompression sickness on record that occurred at an altitude of 26 000 feet. This case will be the second as the altitude was the same except for that brief interval when the pilot went to a cabin altitude of 29 000 feet. When he went to 29 000 feet it did not take but a very few moments for severe symptoms to ensue in the patient. I think that the differential diagnosis in the hospital of ruptured aneurysm of the circle of Willis vs decompression sickness was good. At the time Doctor Coone saw the patient he reversed the order.

Naj Chail B Ma hall J USAF (MC) Resul nt A 1 at M di 11. Lt C I V M. D w y USAF (MC) Staff Sch I f A 1 att M di 11. nd lph Aur F Ba T

D C new the first organily to sg tith diagnosis of d compective. The works g diagnos pressing will we share his diagnosis of d compective.

he then had a clear spinal fluid to his advantage. Decompression sickness was now the preferred diagnosis and some intract nial himor thage fir in whatever cau e the alternative. There are some rare differentials and I think syphilis should also be ment oned. This seems a remote poss bility in this case. The man was young with no elidence of vascular lues. He was an Army officer and subject to frequent serologic testing.

- D + Jh + Wh t do you think of the possibilities of a pheochromocytom or islet cell adenoma of the tail of the pancreas for instance. These should represent an academic brace of possibilities in the differential diagnosis.
- D + D w y I think pheochromocytoma is a good possibility I m surprised we have left it to the pathologist to suggest that one You remember that his blood pressure was 180/120 mm Hg-way up in the abnormal range-as a m tter of fact high for decompression sickness There is a blood pressure rise but usually of the order of 150 to 160 mm Hg systolic and something well below 120 mm Hg diastolic I don t think I know of any other that went to 120 except one other case that was a d plicate of the case and that happened on 25 January 1953 A colonel in the Air Force was also a p ssenger in the back seat of a T 33 jet aircraft and was in transit le than 4 hours I don't know where the flight was to but over Alexandri he developed cerebral symptoms and actually looked a great deal like this-had a hemiparesis, the pilot realized that the man was in difficulty and landed in mediately They got him to the hospital where he p omptly died very much like this p tient and autopsy also showed air embolism. There are perhaps only two cases other than this third man that I know some thing about, so I don't think decompression sickness stands a the initial diagnosis when we know of only three cases. There are more cases in the literature
- To summarize the gross autopsy findings which I am now going to ill strat This man s far as we could see at the autopsy table had pulmonary edema and congestion that caused his lungs to weigh 1 000 grams when about 500 to 600 grams would have been a reasonable weight. His heart weighed 325 grams well within the normal limits and showed no gross abnormalities except for two lesions. The first w s a small atheromatous plaque of a margin I branch of the left coronary artery c using bout 60 percent occlusion. As far as we could judge anatomic lly there was quite a great deal of collateral circulation about this plaque so I do not think that it pl yed a significant part in the patient s de th. The second abnormality was a patent valved foramen ovale. It had an opening that pproxim ted 15 cm on the left side of the heart again t which the v lve was oriented There was congestion of the liver and spleen. The temainder of the gross autopsy was not remarkable. The autopsy performed about I hour after death, was carried out entirely under w ter We had the fanciful hope of being

able by this means to demonstrate intravascular or interstitial gas bubbles but this proved to be entirely in vain. There were no gross lesions on section of the brain Microscopically however numerous inschemic foci which I will demonstrate were found in the anterior commissure the septum pellucidum head of the caudate nucleus basilar portion of the pons and the cerebellum as well as a number in the cerebral cortex. A few perivascular petechiae were also demonstrate ble in some of these areas. There were conspicuous perivascular hemorrhages in the floor of the fourth ventricle at the midpontial level. All of the important work in establishing the diagnosis of this autopsy was done in Washington by Doctor Webb Haymaker of the Armed Forces. Institute of Pathology. Nerve cells and myelin sheaths suffered greatly in the areas of injury. There were lymphocytic foci of inflammatory reaction in the pars basilaris points.

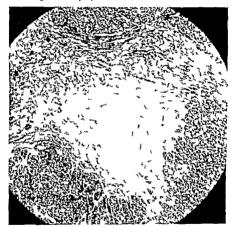
We did not remove the entire spinal cord however the cervical portion of the spinal cord was available for study and you can see that there is an almost explosive injury to myelin sheaths and ganglion cells in the ventral horn (figs 1 and 2) The lesions in the cerebellum and cerebral cortex are illustrated in figures 3 through 5 In addition we found numerous fat emboli in the lung (fig 6) and a few scattered fat emboli in the brain (fig 7)

Now you might ask why stain these tissues for fat? We did so be cause we thought of intracellular gas bubbles in fat (and our particular preference is the bone marrow) that rupture cells on expansion and release their contents into the sinusoids surrounding the fat cells in bone marrow. They could be transported thence to the lungs and through the patent foramen ovale into the brain. The alternating possibility that fat embols could filter through the lungs is supported by the fact that only two fat embols were found in many sections of the brain. As to the pathogenesis of the ischemic foci in the brain, we envision these to be the result of intravascular gas emboli combined with vasospasm We have no simple explanation for the vasomotor phenomena in this patient -hypertension followed by shock-nor of mydriasis tachycardia and tachypnea We would like to relegate these to the province of the physiologist If there aren t any questions about the pathologic findings I shall ask Doctor Schwarz to proceed with an explanation of the bubble formation.

Do to Schw x The pathologic findings of the case presented to us suggest a diagnosis of intravascular fat emboli in the absence of gross body trauma we must ask ourselves the origin of such fat emboli Rupture of fat cells presumably secondary to the formation and extension of large bubbles within the cell seems the most probable mechanism we should therefore concern ourselves with two questions (1) The origin of intracellular gas bubbles as a complication of high-altitude flight and (2) the reasons that bubbles occur primarily in fat tissues.

Frt Lt Man J Schwitz USAF (MC) Phys logy Brach Ao-MdclLb-

Bubble form tion represents a process by which gas s in super satur ted solution within the cells may enter the gaseous ph se From the physical tandpoint we must differentiate two processes-one of bubble formation the other of bubble expansion It is a well known physical phenomenon that gases may exist a supersaturated solution until some stimulus or nucleus for bubble formation s found into which the gases can rapidly diffuse



igus 1 D tuct as a ve talbar f uperior cervical egme tof spinal cord. The ignificance of thi chag is meertan. Ther little as ociat d bemorrhage The l to was bilateral at this level (Lillie 1 in, × 45)

h w what is the mechanism of upersaturation? The n wer lies in the difference in the part I pressures of nert g s s in the biologic system as one ascends. The biologic elimin tion systems namely the circulation and the lungs are un ble to eliminate the body's nitrogen stores at a suffic ently rapid rate to keep pace with the decrease in partial pr ssur f itrogen in the surrounding atmosphere as one as cend in modern fl ght. The result is that the p son who rapidly as cends to high altitude may find his tissues supersaturated with n trogen when comp red t the surrounding atmosphere It is this difference in pressure which is sponsible for the in ti ti n of bubble

It would appear that we may divide the body into several apparent segments physiologically speaking The lungs are in active contact with the outside atmosphere and thus rapidly give up their nitrogen. There is almost no lag of any alveolar nitrogen content with respect to the outside atmosphere regardless of the rapidity with which one ascends. The aqueous circulatory system appears to lag only slightly behind the lungs. Presumably any area of the body adequately perfused by the circulatory system should be capable of giving up its quota of



Figure 2 Higher magnification of stea from figure 1 showing distended and ruptured myelm sheaths Axon swelling was also demonstrated by Bodum stain. Ventral horn cell n upper 1 ght portion of the field (Lillie stain × 250)

ineit gas with a telatively small lag. There are however certain areas of the body which have relatively poor circulation and therefore do not have free exchange of dissolved nitrogen with the nitrogen of blood. The most significant example of this is fat tissue. Nitrogen is far more soluble in the lipid system than in the aqueous. A considerable volume of literature shows that there is approximately five times as great a solubility of nitrogen in fat as in the aqueous system. The literature further indicates? That fat tissues of the body consequently give up their nitrogen extremely slowly.

The end result is that the individual who ascends as this Atmy captain did may build up large amounts of nitrogen storage in the fatty tissues. The greater the amounts of fatty tissue in the body in proportion to other tissues the greater the degree to which this can occur If such supersaturation becomes sufficiently great and the conditions

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Pigur 4. Foci f d my l nation and ischemic hang i ce b llum i volving gry nd wb te matte (Lillie st in, × 27)

are possible for bubble formation bubbles may occur within those cells that are the most supersaturated namely the fat cells

Considerable work has been done in this problem of nitrogen elimination, and rather complex curves of elimination rates have been obtained



Figure 5 Ischemic changes in cerebral cortex. No laminar distribution of lesions was observed such as might argue anoxic pathogenesis. (Lillie sia n. x 8)

These tend to show that nitrogen is not eliminated according to a single exponential term as might be expected if one were dealing with a single simple system (all parts of which are in equilibrium with each other and in which nitrogen leaving the system is independent of the

actual amount of nitrogen present but at any given instant is a function of the total amount present). Rather thin such a simple relationship it appears that the body elimination curves that have been found do supply to the concept that the body consists of several systems each fewhich is in contict with the other. There is some lag of exchange. The end result is that most descriptions of the body is all mination of nitrogen comiss to fiseveral exponential terms.

I hop this brief summary conveys to you some of the principal concepts involved For the ewho are interested in the extremely import in problem in modern aviation medicine. I would like to ref 1 you to an excellent complete and relatively nonrechnical report de ling with the sibject of decompre sion sickness. This report is published under the au pices of the Nation I Research Council under the editorship of the committee headed by Dr. John Fulton. I would like to close by pointing out that this problem of itssue supersaturation with gases bubble formation, bends and related syndromes is one of considerable significance to those of us working in the field of high-altitude flight and physiology. We may rightfully antic pate that it will become more and more a rechnical problem faced by armed services personnel the world over as high-altitude artists become more and more commonplace.

b m Since we eem to be pointing to the idea th t bends wis the case of this man side that might be right a this time to enumerat s me of the common and acc pted symptoms of bends The first sympt m of bends is deep p in particul rly in the shoulders and kn es nd then n other joints Choke my ensu which is a chest o in difficulty in breathing and a subjective sensat on of burn ne in the lung and uncontrolled co glung There m y be blurred vision and th p tient may have blind spot Paraly is possible as is loss of c use o sness eith r d pendent on o independent of the pain from the bends area. So with this hort list if symptoms I would like to talk on the environme tal indiconstitut nal facto sith tiplay a part in bends I am taking this from report by Motley and assoc ares who examined the training rec rds of some 68 000 trainees during the last war Under env comment I factors they found that the time of the d y played part in the incidence of bends. The earlier in the day, the greater the incidence of bend. A the day progressed the incidence of bends decre ed There wa no comel tion with the day of the week the month o the year Th temperature of the chamber definitely had an influenc on the occ ir nee of bends-the cold i the temperature the more frequent the occurrence of bends. As for anoxia-quite often we think that perhap anoxia or hypoxi m y be associated with bends There is no correl tion between hypoxia and bends. In those individuals studied who d liberately were made hypoxic the incidence of bends was no gre ter than in tho e who were adequitely oxygenated Now ome of th constitutional factors Cert inly the I get the man the gre ter hi suscept bl ty to bends. Height of the individual yes-the

Mr Donald AR he m R ea Phy 1 g Phy 1 gy Br h A o-M d cal



F gure 6. Fat embol in pulmonary arteries (Oil red O stain, × 130)



Pipus 7 Fatomb il in combato ecole (lelle Alieta e 1 Al)

taller the individual the greater the susceptibility to bends. However this is probably due to the fact that a taller ind vidual is all of e viet. Weight 3 definitely—th heavier the individual the greater the sceptibility to bends in the more severe the bends. Weight by itself however is a poor yardstick to use. They use here linear density this is height in the compared to weight in pounds. We are suggesting in our laboratory the us of specific gravity that is the am unit of fat to body weight ratio as a test.

N w what are th ways of reducing or preventing bends? First of all there is a bin pres urization. Doctor Downey and I have evidently re d different p pers Henry of the Uni ersity of Calif rnia in 1953 showed th t mild bends will occur at 24 000 feet moderate at 28 000 feet and evere at 31 000 feet Therefore there is a very good po si bility of bends occurring at 24 000 feet. If the cabin pressurization is below 24 000 feet we should get I tile or no bends. The tas an arcraft problem Preselect on is definitely a med cal problem. We have surgested to the Surg n General's office several items to be included in the physical examination for pressure-sure training for individuals wearing the T 1 or S-2 altitude su t First of all we suggested a complete medical histo y-that is of both parent and of the individualand a psychi tric examination and history that should elic t particularly the man fe lings about whether h wants to fly t 50 000 feet and whether he w nes to west an It tude s it for s yet I hours or not Second a rigid phy cal examination i necessary It should be pointed o t to the physic in in charge why this physic I is so import nt to the indiv dual and it shuld be a separat ex mination, not a r utine o e The weight especially should be checked—that is the specific gravity of th individ al the amount of fat to body weight ratio We would super thro nteenoge ms fith chest particularly noting heart size and a y f t d po t in and ar und the heart We would like an electrocardiogram If there is any abnormality or suggestion of abnormality cardiova cul r te t should be us d If any abnorm lit es show up no altitude training should be gi en that individu !

Preoxygenation is probably the one most commonly used in the Air Force—that is prebreathin 100 percent oxygen before ascent to altitude in an attempt to was hour the introgen in the body Studies have been made to how the there is a break in the needed reliance to neutre in 10 1½ hours. In recent it sts we have found that 1 to 1½ ho is is the optim m. We have been using 2 hours of proxygenation before any a cent to altitude above 43 000 feet and we have found that that eliminat s bends almost completely. The T1 altitude suit is devised primarily to protect against hypoxia. It will give the individual as 1 to 2000 foot higher altitude before the onset of bends probably because of the pes use reserved by the suit itself bith closs not mean that the m nath odoes not get bends at 31 000 feet can put on the pressure uit and go to 33 000 feet.

COMMENT

The possibility that anoxia might be responsible for the lesions seen in the brain is considered to be well ruled out by both clinical and pathologic observations. There was no cyanosis during continuous observation. The oxygenation system of the aircraft was thoroughly checked as well as all equipment such as oxygen mask, et cetera, and reports indicate that those were in good order. The pilot experienced no symptoms hat embolization has not been reported in association with fatalities from diver a decompression sickness. There is no record of its being searched for Fat embolization has, however, been demonstrated in six or seven persons dying from decompression to altitude in decompression chambers.

Further discussion with the physiologist indicated the line of thought that vasomotor phenomena observed in these cases might be the result of vasovagal reflexes. Experimental work in the Aeromedical Laboratory of Wright-Patterson Field tends to support this suggestion Preatropinization of dogs subjected to high altitude decompression has resulted in an encouraging diminution of these manifestations. This work is soon to be published. As aircrafts fly ever higher, the problems of decompression sickness in relation to susceptibility, prophylaxis, and treatment will become of increasing importance. It is in the hope of exciting interest and calling attention to these problems that this case has been presented.

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CASE REPORTS

Echinococcus Disease in an American Veteran

SAMUEL ZELMAN W D

CHINOCOCCUS infection is rarely seen in the United chiefly the Mediterranean area South America and New Zealand. It is acquired by in estion of food contaminated with do_ feces containing the ove of the dog taneworm Echinococcus granulosus The dog acquires infection by eating the infected liver or other tissues of the intermediate host most often sheep in which encysted scolices are present. Cysts are of slow growth over many years and occur most commonly in the liver (65 per cent of cases) but have been described in many organs. The right lobe of the liver is involved 85 percent of the time. Hyper sensitivity to cyst fluid is characteristic of the disease and fatal anaphylactic shock may follow intraperstoneal rupture of the cyst. This hypersensitivity is employed diagnostically in the antigen skin test and the complement fixation test Eosinophilia is said to occur after escape of any fluid from the cyst and is found in 25 percent of nationts

The case here reported occurred in a veteran of World War II who has not been outside the United States except for his over seas service in North Africa Sicily and Italy He landed at Oran North Africa on 2 November 1942 About 6 months later he and six or seven other men of the 689th Airborne Infantry Division cleaned out and occupied for a period of 2 months a barn which had housed sheep near Constanting North Africa The area was one Liven over to grazing sheep together with shepherds and sheep dogs. The men kept no dog

CASE REPORT

A 40-year-old laborer w s admitted to this bospital on 1 June 1955 compl in no of inter ing epig stric pres ure and aching worse after meals with occas al nau ea and yom ting of more than 1 years durition accompa ted by a weight los of 14 pounds lie had been bospitalized the prev u autumn because of nervou ness chatactetized as tension utilability to tlessness and nability to hold a job and had been diagnos d as having chronic paranoid schizophrenia During the hospitalization, be had complained repeatedly of tight upper-quadrant ach ng bec use of which coentgenographic studies of the gallbladder and colon had be nd oo but were nervealing

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Decembe 1955) CASE REPORTS—ELEMPORCECOS DESIGNATION OF The past history included spinal meningitis at the age of 7. The patient had served in the Army Auborne Infantry as a private first class from December 1941 to September 1945, with service overseas in North Africa Sicily and Italy. He had not otherwise been outside this country. During the year 1944 while in Italy he had been repeatedly hospitalized for pyodermas and abdominal complaints with admission diagnoses that included possible duodenal ulcer gastritis cholecystitis lead poisoning and hysteria but none of these were substantiated. A transient hemiplegia occurred which may have been hysteric Latent syphilis was diagnosed by serologic test in 1942 and asymptomatic neurosyphilis by spinal fluid test in 1945 after which the patient was given penicillin and malatial therapy and a disability discharge for psychoneurosis anxiety reaction.

In 1951 while working at an ammunition plant the patient was struck on the head by a shell box sustaining a skull fracture and found unconscious. He was treated at home in bed for 42 days. On the first day out of bed he developed right hemplegia for which he was taken to the hospital and a blood clot evacuated through a burr hole of the left patietal region of the skull. The paralysis gradually cleared over the next 4 months. This was the only hospitalization between 1945 and 1954.

Examination revealed a rounded firm smooth tender mass in the epigastrium extending rearly to the umbilicus. A flat percussion note was elicited over the mass. The right lobe of the liver was separately palpable at the right costal margin. Examination of blood urine, and stool specimens revealed no abnormalities. The blood serologic tests for syphilis were weakly positive. The cephalin-cholesterol flocculation and zinc turbidity tests of the serum were normal but the thymol turbidity was slightly elevated (5.2 units). Bromsulfalein (sulfobromophibalein sodium) retention at 45 minutes (5 mg per kg.) was 36 per cent. Roentgenograms of the digestive tract revealed a large rounded cystlike mass in the epigastrium anterior to the stomach and depressing both stomach and colon (figs. 1 and 2). The shadow of this mass could also be identified in the roentgenograms of the gallibladder area taken the previous year. Intravenous pyelograms proved negative for polycystic disease.

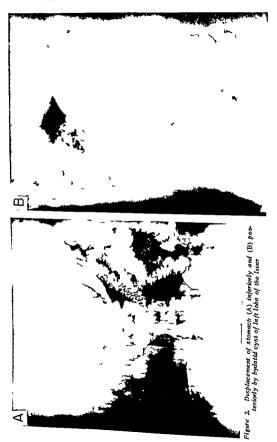
Believing the mass to represent either an enlarged left lobe of the liver or a mesenteric or liver cyst and not having considered the possibility of hydatid cyst. I attempted diagnostic needle aspiration on 20 June Clear watery fluid spurted through the needle under considerable pressure. A liter of fluid was aspirated. The later portions of the fluid showed evidence of freshly admixed blood in small amount presumably a result of rapid change in pressure. The patient experienced immediate relief of the sense of epigastric pressure. Only the first fluid as purated was sent to the laboratory because hydatid cyst was not yet suspected. No scolices or booklets were found in that specimen of

fluid which was repo ted to have a specific gravity of 1 001 and a protem content of 5 mg per 100 ml No growth was obtained on cultur



F gure 1 Epiga tri y tic ma l ft lob of l r Post t tor gure i apiga its y sic ma ift lob of l r Post t for i-g nogr m take the land gp tion after ge to f Sidlit p wder nd i flatio f colo with air bow g gbt l be f liver distinct from cy tic m i left lob

A few hours fter the n edle aspiration, the patient c mplained of lower substernal pain which was rely w d by elevating the head of th bed Duri g the ne t 48 hour he had fever tachycardia and leukocytosis Th were anorexia and abdominal fullness with tymp by over the bdomen and tend mess of the right side of the abdomen but n dullness to percussio and no fluid w v At the peak of this reaction there wa some muscle resistance in the right lower quadrant. Perstal continued normally The temp r ture course co sisted of gradual rise to 102 4 F ab ut 24 hours after aspiration, with gr dual defervescence during the sound day S rum amyla e determination and penty nograms of the chest and abdomen t ken with the p tient in the supr and tandi g positions revealed no cause for this t ction. The patient appeared much les Il th n would ha be n just f ed by the fever and leukocytosis and abdominal f ding were minimal The leukocyte count on 21 June was 16 500 p u mm w th 95 percent granulocytes in luding 7 percent non gment d neutroph ls while th sedimentat on tate tos only lightly to 18 mm per h ur (W ntr be meth-



od) The next d v the l ukocyte count had f lien to 12 500 per cu. mm with 81 percent gr ulocytes and the sediment tion r t w s 23 mm per hour There wa no change in ed blood cell or hemoglob n v lues

The leukocyte count w s normal thereafter However th eo mophil perce tage which had been I percent on II p evious blood cell co nts rose to 3 percent on 24 June 6 percent on 27 June 7 percent on 28 June 10 percent on 29 and 30 June and 15 percent on 1 July Chamber eos nophil counts rose progre sively from 490 per cu mm. on 27 Jun to ap ak of 1 380 on 5 July

By 24 June a considerat n of thi startling reaction to aspirat on together with the peculiar characteri tic of the spirated fluid (increased pr saur d naity alm at of wat r n ar absence of protein) led to the conviction that a hydatid cyst had been spir ted and that suff cient leakage to re ult n a reaction of hyper ens tivity had oc curred The subsequently rising eo noph I counts le t further confumation to this clin cal diagnosis

On 27 I no 0 2 ml of Echinoc ccu antigen (El Lilly Co) wa in secred atracutaneou ly resulting in both immedia and delayed a actions The former maximal within 30 minut a consist d of a wh al 2 cm in diamete surr unded by erythem 4 cm i d meter which faded within I h iir The next day an indur ted e ythem 4 cm in d met covered the are of the previous rection. Blood driven before ad m nistr ti n of the skn antig n w sub eq ently report d by the Communicable Dise e Center U S Public H Ith Service to give mplem nt f xation r action with Echi oc cu positive

The pat ent continued to have intermittent mild p in ind tende ness in the epigastrium and i ght side of the bdomen and the epig stric cystic mas r pidly recurred Surgical xploration wa perform d on 8 July At ope ation p formed by Drs J seph P B ll and Lesle L Saylor of this h spital the left I be of the li er i lled the upper abdomen and seemed c mpletely replaced by the cyst Th are of needle aspirati n was f und well healed. The cyst was spirated partial Iv eva nated of its germ nal layer a d its content steril z d by insection of 10 perc at formal a (brand of 40 percent f smaldehyde solu t on) It was then marsupialized to the per tone m and p cked with gauze It has been drag one unev tfully a nce Laborat y e amonat n of fluid and the g rminal I yer obt ned at operation demo strated scolices and hooklets of the Ech nococcus para te (f g 3)

In an att mpt to a ert the c sequ ces of hypersen t vity rea tio t pilled hydatid cyst flu d addit on to walling off of th op rative field by g uze p ck 100 mg of hyd cortisone w dm n st ed in travenously at opr tion before the cyst was op ned and and mal steroid the apy w s continued dur ng the ext 2 week Post perat ly the patient's temperature and pulse rose gradually and progres v ly rea hi g a peak temperature of 1024 F on the second and third postoperative days and ub ding by lysis o er the next 2 d ys to be Dec mber 1955)

followed by mild remittent fever for 3 additional days. Only mild leukocytosis and eosinophilia accompanied this reaction. The patient

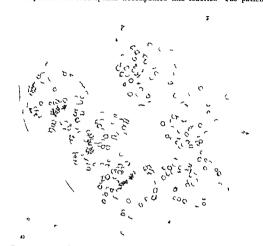


Figure 3 B ood capsule of E ganulos s containing six scolices their heads invag nated obtained from cyst fluid at operation. The brushlike booklets a e plainly visual zed. (x 150) was otherwise asymptomatic and no cause for the febrile reaction could be found on physical or roemgenologic examination of the chest and abdomen. A slight but transient rise in serum bilirubin and cephalincholesterol flocculation occurred

DISCUSSION

This case is reported primarily because of the probability of exposure to Echinococcus infection of an American soldier during World War II, and the need to alert others to the possible occur rence of other such cases Althou, b no other case of exposure to this disease during World War II has thus far been reported, one case of a native American soldier who apparently contracted the disease in France during World War I is on record *

With the possibility of this diagnosis in mind needle aspiration may be avoided, sparing the patient the hypersensitivity reaction which follows a leak of cyst fluid as well as possible spill

of scalices into the peritoneal cavity where they would serve as sources of new cysts Preoperative diagnosis can be achieved if the entity is considered and the skin and complement fixation tests applied

Treatment is surrical if the cyst cannot be totally removed sterilization of its contents by formalin and total removal of its germinal layer is best followed by plication of the adventitial wall to obliterate the cavity and suturing without drainage If ob literation of the cavity cannot be accomplished marsupialization and drainage are necessary but drainage may continue for a prolonged period

The use of adrenocortical steroid therapy during and following operation as tried in this patient may help to avoid the stormy anaphylactic reaction which usually follows the inevitable spill of cyst fluid No other report of the use for this purpose of adrenocortical steroid therapy has been found but antihistamine therapy has been reported to be of similar value

SUMMARY

An American veteran of World War II presumably exposed to Echinococcus infection in North Africa in 1943 when he spent 2 months housed in a sheep barn was found in 1955 to have a large hydatid cyst of the left lobe of the liver Needle aspiration of the cyst which is not advised resulted in probable peritoneal soiling and the patient had an anaphylactic reaction. He was protected against what might otherwise have been a similar but more severe reaction by administration of adrenocortical steroids during and after operation.

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Dat d speempre tuth Lots of thangs work in pac t ce to which the laboratory has neve found proof -Marti T F sche

Metastatic Adenocarcinoma of the Thyroid Gland

HOWARD W SMITH Captain, USAF (MC)

THE posterior wall of the oropharynx is an unusual location for the presenting site of adenocarcinoma of the thyroid gland A careful search of the literature failed to reveal a previously reported case. This case is reported to emphasize the possibility of finding thyroid tissue in pharyngeal biopsies and to stress the differential diagnosis when a mass is present near the path of embryonic migration of the thyroid gland.

The differential diagnosis of tumors in the pharynx include acute and chronic infection, granulomatous processes, vascular lesions, embryonic rests and benign and malignant tumors

CASE REPORT

A 24 year old airman reported to the ear nose and throat clinic at this base on 24 June 1955 to have his tight tonsil removed

Present illness The patient was well until 18 months prior to admission, at which time he noted a small swelling in his throat about the size of a 25 cent piece. The swelling was sore for only a few days. He soon became adjusted to the presence of the small mass and did not seek treatment at that time. Nine months prior to admission the patient again experienced soreness in the area of swelling and reported to the infirmary on routine sick call. He was said to have "tonsillitis" and received penicillin injections for 4 days. The soreness in his throat disappeared for about 2 weeks and then gradually returned. Six months prior to admission be noticed a swelling in the right side of his neck for the first time. He had his shirt collar made a half size larger but it still remained too tight. Three days prior to admission the battern reported to the ear nose and throat clinic to arrange for removal of his right tonsit. Which was gradually making talking and swallowing more difficult.

Past bistory The patient's health in the past had been excellent. He had had the usual childhood diseases but no history of mumps scarlet fever or rheumatic fever. The patient had experienced no adult infectious diseases. Both tonsils had been removed at the age of 13 years because of recurrent attacks of tonsillities.

F m U S Au For Infumary (MATS) Andr w Au Fo c B W h & D C

He reported a weight of 181 p unds and gain of ppro mately 15 pound in the p eceding 3 ar There w s no f mily history of c neer or endocrine disorders.

Physical exam nation. On admission the patient's temperature was 99 F the pulse 90 and the respir tions 16. The blood pt ssure was 130 syst lie. 80 diastolic He was a well-developed well nourished young man in no distress His voice w s om whit muffled as though his soft p lite wire diffective. The nasal septum was deviated to the right with only slight reduction of air passage on that side. There was a mass in the oropharyne occluding the whole right sid (fg. 1). The convexity of the mass was directed interiorly with a distinct fold be



F gur 1 The ma o the ght pot nor pharynge I w II xt nd g from the l ft ud of the lat the ght lateral wall f the pharynx completely fill g the ght or pha ynx

tween it and the ant no pat of the right pharyng I wall. The mass had pushed the phary gop lat nus and glossopalat nus muscles forward the right side. There was no filln so or displacement of the s ft palat although the ms ext nded up to touch t inferior border. The mucos was of a mal cole n de asist ner over the mass and not adherent to it. The mass was firm nonmov ble not n dr norfle tru nt nd did not puls te. A s ft mov ble nontender node let m I ng w s palpated anterior to the right te now to dimuscle at the angle of the jaw. There w 2 cm soft movabl n de bove the middle third of the right clavel posterior to the transtord muel. A 3 cm soft mov ble node was felt ante o to the right sternom toud muscl at

approximately the outer edge of the right lobe of the thyroid gland. The thyroid pland did not appear to be enlarged and no definite masses were palpable There were no physical findings suggestive of endocrine dysfunction The remainder of the physical examination was essentially negative

Laboratory data and diagnostic studies Utinalysis was negative Examination of the blood revealed a hemoglobin of 13 grams per 100 ml and a white blood cell count of 6 200 per cu, mm with a differential count of 60 percent neutrophils 36 percent lymphocytes 2 percent monocytes and 2 percent eosinophils. The red blood cell count was 4 350 000 per cu. mm with a normal smear. The hematocrit was 40 ml per 100 ml The sedimentation rate was normal Roentgenograms of the skull sinuses pelvis and cervical dorsal and lumbar vertebrae were indeterminate for metastases. A barium examination of the esophagus was negative

Nasopharyngoscopy revealed a mass in the lower part of the nasopharynx on the posterior wall extending from the midline of the pharynx to the right pharyngeal wall pushing it laterally and also extending superiorly to a point just below the right eustachian tube orifice. The mucosa overlying the mass in this area appeared normal

Direct laryngoscopy revealed that the mass extended inferiorly on the posterior and lateral pharyngeal walls to a level slightly above the epiglottis Its surface there was smooth throughout with no changes in the mucosa. The tongue in this area was normal

A biodsy specimen of the pharyngeal mass was obtained after a verti cal incision about three fourths of an inch long was made through the mucosa and subcutaneous tissue overlying the mass Fibers of the superior constrictor muscle were separated horizontally to reveal a white glistening fum nonfluctuant nonpulsatile mass lying on the prevertebral fascia The wedge of tissue removed from this encapsulated mass appeared to be reddish brown in color friable and extremely vaccular

Multiple sections through the biopsy specimen revealed innumerable normal appearing thyroid acini filled with dense acidophilic colloid Retween the acini there was a homogeneous connective tissue stroma

Hospital course Following diagnostic studies at the base infirmary the patient was referred to a general hospital for tracer studies and surpical care Scintillograms in the right lateral position revealed slight untake of radioactive iodine ([131]) at the angle of the jaw There was normal uptake and a relatively normal distribution throughout the thyroid gland A radical neck dissection and total thyroidectomy were subsequently performed The neck nodes were examined and found to resemble normal thyroid tissue A small nodule was found in the right lobe of the thyroid gland

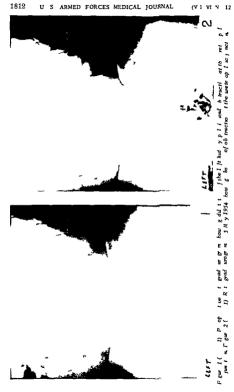
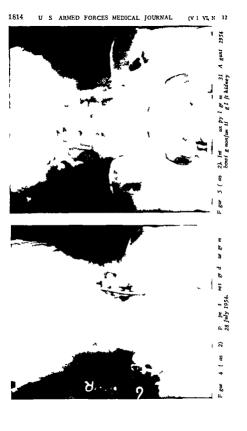




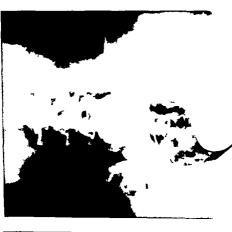
Figure 3 (case 2) Retrograde urogram on 13 July 1954 showing a ea of ext avasation.

catheterization of the weter met with failure. The patient was trans ferred back to this hospital on 30 August 1954. A repeat intravenous pyelogram (fig. 5) confirmed the diagnosis of complete blockage of the left wreter with absence of tenal function on the left. The wrine contained 3 to 5 red blood cells and 30 to 40 white blood cells per high power field and monilia organisms were found on culture.

On 2 September 1954 the left weter was explored. The pelvic portion was found embedded in dense scar tissue with loss of normal character issues. The normal portion was resected as low as possible leaving a gap of about 3 inches to the bladder Starting on the right wall a section of bladder about 2 cm in width and 8 cm in length, with the base on the upper left portion of the bladder was resected. There was some shrinkage of the flap. The bladder was closed with cystostomy drainage. The flap was rolled into a tube and sutured with No. 00 chronic



re/lux.



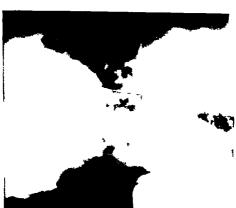


Figure 7 (case 2) Cystogram demonstrating nipple without weteral Figure 6 (case 2) Postoperat ve retrograde urogram

catgut. An end to-end anastomosis was made with the ureter over a No. 16 polyvinylite tube which w b ought our with the v tostomy tube

The splint w s left in place 3 week ft which the ureter w s d I ted ver I t me w th a N 12 French cath ter A retrogr de pvel eram on 4 October (fig. 6) showed that the pelvis of the left k dnev had retu ned to norm I s z A cystogr m rev led bout 2 cm of reflux p the pedicle flap (fig 7) An intravenous pyel gram also in October r v led a norm lly f ctioning kidney with no evide ce of hydr nephr sis The ur ne rem ined sterile ind the patient symptomatic

DISCUSSION

When tissue is needed to elongate the ureter at either of its ends we recommend the use of urmary pelvis or bladder tissue The advantages are good blood supply use of tissue similar to the ureter and simplicity of operation. We left the splinting cathe ter in place for 3 weeks but believe healing will be better if this time is prolonged to 4 or 5 weeks

We did not use nephrostomy tube drainage in case 2 No attempt was made at any time to obtain a watertight closure We believe that it is best to use the minimal number of sutures to obtain approximation without tension

It has been stated that as much as two thirds of the ureter can be replaced by bladder flaps. The amount that can be replaced at the upper end depends on the size of the renal pelvis

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SURGERY IN GENERAL PRACTICE

The ntern who is contemplating gene I prictice would b well dysd to concent ate n med c ne pa d atr cs d ob t t 1 a d gynaec logy n that rder Cont ry to popular bel ef p t ent r q 1 g m jor or min r surgery co st tut less th n 3 % of tho s n by a G P In a tem p ate cl m te such a ours otola y gology occupies more f his time (b t 5/2") a d should rec iv attent on ac cords gly

> -H G HALL M D Cad Nd IA t | wnal p 91 J ly 15 1955

Myocarditis in Acute Poliomyelitis

RICHARD LAWRENCE Commande (MC) US\
DAVID B CARMICHAEL Let nant Command (MC) US\

R OR many years the pathologist has been aware of acute myocarditis as a complication of acute poliomyelitis Myocardial involvement consisting of cloudy swelling of the muscle fibers and interstitual edema was noted in five of six cases of acute poliomyelitis reported by Robertson and Chesley' in 1910 In 1918 Abramson's reported evidence of myocardial inflam mation in a pathologic report on 43 cases of acute poliomyelitis In 1934 Cowie and associates' reported four cases of myocarditis associated with fatal poliomyelitis. In one of these patients, the myocarditis was localized in the right atrium with a mural throm bus at the site and resultant pulmonary embolization In 1942. Saplar and Wile described seven cases of poliomyelitis in which histologic evidence of interstitial myocarditis was present identified myocarditis as a feature of poliomyelitis Saphir subsequently reported 10 cases of myocarditis found at autopsy in a series of 17 patients dying of poliomyelitis and suggested this as a cause of sudden death in this disease. An unusual case of acute poliomyelitis and verticous endocarditis involving the mitral valve for which no rheumatic or bacterial cause could be identified was reported in 1946. A review of the postmortem findings in 35 patients revealed evidence of myocarditis in 14 'Itisof interest that in this series there was one case of myocarditis with per foration of the posterior wall of the right atrium one case of verrucous endocarditis involving the mitral valve without evidence of rheumatic fever and one case of endarteritis of a patent ductus arteriosus Minimal valvular changes with and without myocarditis were found almost constantly in this series. These consisted of separation of the valvular stroma as if by edema and eosinophilic bundles of collagen fibers that were more marked in the aortic and mitral valves Jungeblut and Edwards' isolated the polion velitis virus from the hearts of three patients dying of poliomyelitis

Electrocardiographers have also been aware of the myocardial aspects of this disease Electrocardiograms in a series of 226 patients with acute poliomyelitis were reported to be abnormal in 32 (142 percent). The frequency of abnormal tracings was found to increase with the seventy of the disease and with the increase in the duration of the fever. When abnormal tracings occurred it was observed that changes persisted for several weeks.

In a recent group of 265 patients with poliomyelitis abnormal electrocardiograms were found in 37 percent it was further noted that in those with bulbar involvement 50 percent of the tracings were abnormal. In a review of 49 cases occurring from 1942 to 1951 myocarditis was found in 55 3 percent and it was further noted that the incidence and severity was greater in certain epidemics the fatal cases in 1949 having an incidence of myocar ditis of 100 percent Because of this it was su_gested that specif to strains of poliomyelitis yirus may be viscerotropic.

Clinical correlation with these findings has been more difficult to evaluate As has been mentioned above Saphir hypothesized myocarditis as a cause for sudden death in this disease and Dolgopol and Dragan reported that several patients with poliomyelitis dying of heart failure showed the findings of acute myocarditis at autopsy Recognition of this complication at the clinical level has been a recent innovation. In general although myocarditis in acute poliomyelitis and more especially in bulbar poliomyelitis is now a well recognized pathologic entity clinical attention has not been directed to the frequency of cardiac in volvement in the disease complex. In some current texts of internal medicine this manifestation of the disease is omitted or mentioned only briefly.

Because of the serious neurologic involvement in poliomyelitis the diagnosis of myocarditis may be extremely difficult to make Dyspnea cyanosis and tachycardia are of little value in the differential diagnosis in one reported comparative series they occurred with equal frequency in those with or without myocardial movlement. Occasionally with severe myocardiats bradycardia may occur and may be a useful diagnostic sign. Nevertheless in the diagnosis great dependence must be placed on electrocardiographic analysis.

A comprehensive review of the electrocardiographic changes associated with acute myocarditis is beyond the scope of this presentation. No specific pattern is universally indicative of myocarditis although certain diseases may characteristically present one or another abnormality with unusual frequency e g first degree 4V block in acute rheumatic myocarditis. At this time no such predilection has been demonstrated in myocarditis associated with poliomyelitis Criteria for electrocardiographic abnormality have been described by several examiners. Tachycar dia T wave changes and prolongation of the Q T interval have been considered to be the most frequent alterations. RS T segment shifts arrhythmas and conduction defects are also found fittleman and associates have stressed Q T prolongation as a useful sign particularly in the forms of myocarditis not associated with theuratic fever.

Reviews totaling 905 cases of acute poliomyelitis revealed electrocardiographic evidence supportive of myocarditis in 310 cases, an incidence of 34 2 percent? It is 17-1 Reubi and Born stein! noted an increased incidence of myocarditis in severe cases of poliomyelitis, equaling 80 percent in severe cases, 36 percent in mild cases, and 18 percent in abortive forms. As noted above, the incidence in the bulbar form has been particularly high

CASE REPORTS

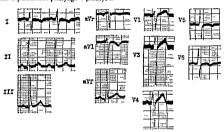
An instance of myocarditis suspected clinically and confirmed electrocardiographically in a patient with severe bulbospinal poliomyelitis is the subject of the first case report.

Case 1 A 35 year old man was admitted to the hospital on 23 July 1954 complaining of difficulty in swallowing and talking. The history revealed that he had been apparently well until 2 days prior to admission when he noted the onset of difficulty in swallowing and inability to expectorate accumulated pharyngeal secretions. On the day prior to admission he vomited several times and noted recurrent nausea and mild malaise. He also found that he was unable to speak as strongly as previously and that his swallowing difficulties had increased. The past history revealed that he had had rheumatic fever in 1943 apparently without sequelae.

The physical examination on admission revealed the blood pressure to be 150/70 mm. Hg temperature 104 8° F (tectally) and the pulse 120 The patient had marked difficulty in disposing of pharyngeal se cretions and difficulty in maintaining an airway. The voice was somewhat weak No difficulty in respiration nor weakness of the extremities was apparent. Reflexes were slightly hyperactive in the upper extremi ties but otherwise were normal Laboratory studies including the serologic test and chest roentgenogram were essentially normal Spinal fluid studies revealed a fairly clear spinal fluid with 100 white blood cells per cu, mm of which 64 percent were lymphocytes Treatment consisted of tracheotomy and intratracheal suction as necessary maintenance of fluid and electrolyte balance and terramycin (brand of oxytetracycline) for control of infection. Feedings were accomplished with an intragastric tube Because of the development of respiratory insufficiency he was placed in a Drinker respirator and respirations were adequately controlled

The patient appeared to be improving until 2 weeks after admission when he developed a low grade fever became quite apprehensive and restless and developed a persistent tachycardia of 120 per min. The apical first heart tone was of poor quality but otherwise no clinical abnormalities were elicited. An electrocardiogram at this time revealed a sinus tachycardia prolongation of the Q-T interval and inversion of multiple T waves (fig. 1)

H was treat d with s d toon oxygen and careful nursing care. During this p od he developed a r ghr fact I weakness weakness of both lower extremite with foot drop on the right and slight weaknes of both aim. The evidence of myocarditis cle red spontaneously er period of sev r I weeks and the electro adiogram reverted to normal Rehab It to e measur's consisted of physiothe apy and tube fe dig for a persistent pharyne I bratlysis.



Fgur 1 (se 1) Ele 1 oc d gram [18 A gust 1954 re l pr lo gation f the Q-T interval nd niver ion fTu in lads I VL, V and V

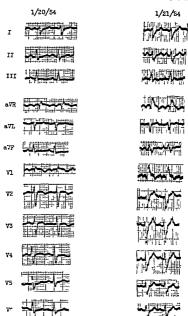
By virtue of the systemic effects of the poliomyelitic infection coupled with severe neurologic involvement the usual clinical guideposts for the diagnosis of acute myocarditis : e fever tachycardia poor cardiac tones gallop rhythm cyanosis fall in blood pressure may be difficult to separate Conversely it is possible for the cardiac abnormalities to dominate the clinical picture and relatively minor neurologic involvement to go unrecognized A report by Brody and associates of a case of interstitial myocarditis complicating clinically unsuspected poliomyelitis represents such a situation in this instance a patient with severe tracheal bronchitis and evidence of myocarditis was admitted pursued a rapidly unfavorable course and died 20 hours after admission. Autopsy revealed an interstitial myocarditis that was presumed to be the cause of death however a review of the pathologic material some months later revealed bulbar poliomyelitis. The following case represents a similar circumstance.

Cas 2 A 23 pe rold woman nered the hopital on the advice of the prenat leln c bec u of exertional dyspines fo 1 week and dy pines at rest fr 2 day. The patient stated that at the ge of 12 she had had mg tory p ly thritis that we diagnosed as ympt matic of hermatic feer she hd been tre id with 6 months bed r t in d sube

quently placed on limited activity at school. Findings of repeated examinations since that time had been normal. No murmurs or electrocardio graphic abnormalities had been noted. There was no history of previous cyanosis or dyspnea. Two weeks prior to admission she had had a cold associated with a stuffy nose and some difficulty in breathing. One week before she had noticed considerable exertional dyspnea. She described this as difficulty in getting a deep breath. Her dyspnea was not affected by change of position.

Admission examination revealed a well developed well nourished woman in obvious respiratory distress with shallow rapid breathing The blood pressure was 110/80 mm Hg pulse 120 and temperature 99 F The skin was pallid and slightly cyanotic No distension of the neck veins was observed. The lungs were clear to auscultation and percussion Cardiac examination revealed a tachycardia of 120 per min with an apical first heart sound of poor quality. No murmurs or friction rubs were heard. The heart did not appear to be enlarged. A determina tion of circulation time was done Arm-to-tongue was 25 seconds and arm-to-lung 6 seconds The venous pressure was 110/mm of water Vital capacity determinations were 35 percent and 41 percent of normal Electrocardiograms taken the second and third hospital days are reproduced (fig 2) Abdominal examination revealed an enlarged uterus near term with possible hydramnios and active fetal movements. A toentgeno gram of the chest showed the heart to appear enlarged to both the right and left Laboratory studies including a complete blood cell count and total protein serum sodium and potassium nonprotein nitrogen and blood wea nitrogen determinations were normal. The CO, combining power was reported as 13 5 and 14 5 mEq per liter on two separate occasions Chlorides as NaCl were 85 mEg per liter and the blood pH was 7.2 During the day the patient became more cyanotic and naus eated and was placed in an oxygen tent. On the following day a repeat arm-to-lung circulation time was 18 seconds and the vital capacity was recorded as 53 percent of normal At about 1500 hours she delivered twins of normal appearance. She continued to be dyspneic and evanotic and 6 hours later the pulse rose to 130-135 per min, and became irregular at the wrist. The electrocardiogram showed a right bundle branch block S-wave type in addition to tachycardia (fig 2) Cheyne Stokes respirations were observed. The lungs remained clear and there was no evidence of congestive failure. No cardiac murmurs or friction rubs were heard The possibility of a nonspecific myocarditis was entertained at this time

About 3 hours later the patient suddenly sat up in bed and complained of being extremely short of breath. She became cyanotic gasped for air and within a moment her respirations ceased. Autopsy findings revealed a nonspecific myocarditis which was considered to be the primary cause of death. Later examination of recut sections from the bulbopointine area of the brain revealed findings which were compatible with acute bulbar poliomyelitis. There were marked edema and hyperemia of



Figur 2 (as 2) Elet cad gr m f 20 J way 1954 bow nus to byco dua ght ax deviation low t sc larv large inver f multiple I wave nd pr l gat o f the OT terval Elect oca d g m [21] vary demonst te the d lop-ment f ght b udle branch block.

the glial troma with dilat tion of the blood voels ind stuffing of the perivocular spaces by polymorphonuclear leukocytes and lymphocytes

Many of the ganglion cells were degenerated with disappearance of the nuclei and extensive chromatolysis

These two cases prompted a review of the hospital records of cases of bulbospinal poliomyelitis. Adequate pathologic infor mation was available on 15 cases covering the period from 1948 through 1953 Myocarditis of varying degree was present in 14 of these cases One case of cardiac arrest in bulbar poliomyelitis with subsequent thoracotomy and unsuccessful massage of the heart was included Poliomyelitis was unsuspected clinically at the time of death Either because of the clinical unawareness of myocarditis as a possible complication or because of the technical difficulties involved, electrocardiographic tracings were obtained in only two of the cases reviewed

SUMMARY

Although the exact role of myocarditis per se as a fatal compli cation in poliomyelitis is difficult to determine, it is apparent that it is a common complication. The clinical diagnosis of myocarditis may be exceedingly difficult because of severe systemic reaction coupled with neurologic involvement. The electrocardiogram may be of significant assistance in the clinical diagnosis

Two cases of acute myocarditia associated with poliomyelitis are presented In the first patient the neurologic findings pre dominated in the second cardiac abnormalities obscured the pres ence of poliomyelitis, which was still unsuspected at the time of the patient s death

Of 15 patients dying of bulbospinal poliomyelitis at this hospi tal during a 6-year period, 14 demonstrated autopsy evidence of myocarditis

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THE GOLDEN AGE OF MEDICINE

It is hard to realize that p for t 1900 only two dis asessmallpox and ur y-could be pr vented and th t spec fic dugs were variable for only the condition - m ly m laria worm a d abie Q i ne usually cured m lar d worm succumbed t many medie lud g earl the do of which wo off tive e en to worm

For e mple n 1930 7 percent of the children admitted to Duke H sptl had d phthetia nd 4 petc twr yphiltc Now diphtheria is a r ty and a post v serolog c test for syphilis s eg rded erron s unt l ve ified A a result of this prog ess the e has be n a marked hift from the treat ment of m dical pedi tric nd geri tric patients n h spitals to tr atment on n mbulatory ba i in office d clinics The modern to mwo k between do t is nuise technicians oci l w kets nd p ycholog sts is keep ng patient w ll

a d tre t ng them n t ad of the r di ease -WILBURT C DAVIDSON M D 10 N tb C 1 M d l Jurnal

p 1 f n 1955

A MESSAGE FROM THE A M A

Congress adjourned 2 August 1955, bringing to an end the First Session of the 84th Congress Although there were 11,914 bills introduced in the session, much health and medical legislation was not acted upon and will therefore be carried over for con sideration by the Second Session of the 84th Congress which will convene in January

The American Medical Association followed the status of 404 of these bills, which had medical implications. Witnesses, representing the Association, testified on 21 separate bills before Senate and House committees. In the field of military medical affairs there were 26 bills introduced in this last session of interest to the Association. Two public laws were enacted per taining to military medicine. One extended the Doctor Draft Act and the other one authorized the commissioning of male nurses.

Doctor Draft Act Extension Public Law 118, 84th Congress, 29 June 1955, extends the authorization for the induction of physicians dentists, and allied categories to 1 July 1957 It continues the \$100 per month equalization pay for physicians and othe s to 1 July 1959 Two important changes were made in the extension of the Doctor Draft Act. First, the age limit for the call up of special registrants was reduced from age 51 to 46 Second, the law exempts from induction special registrants, 35 years of age or older, who are or have been rejected for a commission as a medical or dental officer of the Armed Forces if such rejection was solely for physical disqualification

Commissioning of Male Nurses Public Law 294, 84th Congress 9 August 1955, authorizes the commissioning of male nurses and male medical specialists (dietitians, occupational and physical therapists) as reserve officers in the Arms, Navy, and Air Force

One bill H R 483 which passed the House on 18 July 1955 would authorize the appointment of osteopaths as medical officers in the Army, Navy and Air Force Another bill passed the Senate as S 2587 on 30 July 1955 It would authorize military status for commissioned officers of the Public Health Service in time of national emergency At the present time military status is only authorized in time of war

Immediately preceding the adjournment of Congress, two bills were introduced in the House and one in the Senate relating to Fom th C un 1 N uo 1 Def se f th Ame n M d cal Asso t Th

medical care for dependents of military personnel These measures were referred to the Armed Services Committees H R 7790 was introduced by Chairman Vinson of the House Armed Services Committee It is identical with S 2720 sponsored jointly by Senators Russell and Saltonstall These measures drafted by the Department of Defense would provide medical and hospital care under three general plans (1) in military facilities (2) in civilian facilities through a contributory health insurance program or (3) in civilian facilities with part of the actual cost borne by the dependent

H R 7806 was introduced by Congressman Price This bill requires the use of prepaid nonprofit health insurance civilian facilities and civilian medical personnel to provide limited medical care to servicemen s dependents. It permits the use of military facilities only where civilian facilities or personnel are inadequate

Other military medical bills which were not acted upon during the first session pertain to (a) the establishment of a United States Armed Forces Medical Academy (b) repeal of examinations for medical personnel for promotion in the Armed Forces (c) expanded medical care for retired military personnel and (d) mili tary credit for civilian intern training

In addition to the military medical laws passed in the First Session of the 84th Congress laws were enacted authorizing a national mental health survey and for research concerning air pollution control

Mental Health Survey Public Law 182 84th Con_ress 28 July 1955 authorizes the undertaking of nongovernmental multi disciplinary research into and re evaluation of all aspects of our resources methods and practices for diagnosing treating caring for and rehabilitating the mentally ill including research aimed at the prevention of mental illness. This measure authorizes S1 250 000 in Federal grants to finance the national survey of mental health problems. The survey would extend for three years

Arr Pollution Control Public Law 159 84th Congress 14 July 1955 provides for a 5-year program This bill authorizes \$95 million in grants to state and local governments public and pri vate institutions and individuals for research training and demonstration projects in air pollution abatement

PROMOTIONS OF OFFICERS

The following officers of the military medical services on active duty in the Army, Navy, and Air Force have recently received temporary promotions to the rank indicated

Medical Corps

Geoge L Al nd Jr Lt. USN Charles F Aquadro Lt. USN William F B hason Lt USN John C. B a Lt USN Frederick B B ck Lt. Comdr USN Ern tW Be bler Jr LL USN Ow n D Benton, Lt. USN To eph A Be s Lt. USN Im LB LL USN ha F Bohle der Br g G a. USA R pha F Borr II J Lt USN Murd kS Bowman Lt. C mdr USN Leonard H. Brando Lt. USN P mbr ke A Br wn Capt USA Lothar R Cand l Lt. USN I me M Col Lt Comdr. USN Clar no H. Conn Capt. USA Joh D Co tabl Lt USN John C Cuntry Lt C mdr USN R bert B Crum Lt. USN D vid C. Dixo Lt Comdt USN H bet L Eck tt Lt. USN Lwrnc D Egbert J Lt USN L wr ce K Eppl Lt. USN Da id W E k Ison, Lt. USN Ann C. F d, Capt. USA Robert E Fultz Lt. Comdr USN Smally Guannell J Lt. USN Fran L Gikn Lt. C mdr USN Har ld W Gl ttly Brig Gen. USA D mald J Glotz r Lt. USN Jam W G er Lt. C mdr USN DvdM Hadly Lt USN Jam R Hamilt Lt. Comdr USN F nk P Hamm Lt. Comdt USN Carlto E Hardey Lt. USN 1oh P Harm, Lt USN Mack M Hill Jr Lt Comdr USN Jos ph M H do Lt. USA Richard L Hochman Lt. USN Ald n V Holm Lt. Comd Roy W H lm Lt. Comdr USN Charl E Hugg ns Lt USN John D Jhas Lt USN R lph T Justima odia Lt. USN Andrew M A al Lt. USN

1 ck Kindle Lt. USN Robert F Kuk, Lt. USN Louis R Kr sno Lt. C mdr USN Pt Kurilez J Lt. USN Stuart D K st mann Lt Comde USN Thomas B Lebherz Lt Comdr USN I ome! L bov tz, Lt USN Ruchard H L e Lt. Comdr USN Sheldon G L bow Lt USN W me A Linz Lt. USN Mortimer Lo be Lt USN R hard E Lucht Lt. Comdr USN Ramo R Lunad Lt. USN Charles E Mangin, Lt. Comdr USN Edwa d C. M Keo Capt USA Glen E McPheron, Lt USN Jame F Morrell Lt. Comdr USN Robe t W Ob en Lt C mdr. USN Richard C. Packert Lt. USN Paul H Pennyp cker Lt. C mdr USN JmsC.Pterso Lt. Comdr USN] hn R P rc Lt. USN Jame M Poy t Lt Comdr USN V t A. Pr ther Jr Lt. USN K 1th R R binov Lt USN I me L R sa Lt. INN Ir in A R throck Lt USN Ge ge E Scott, Lt. USN P ter W Schn ider Lt. Comd D ad Schulman Lt USN Le t Schwartz, Lt. USN William C Sharp J Lt. C md USN Martin C. Shea J Lt. USN Chal R Sm th t II Lt. USN Edw rd M Smith, Jr Lt. Comdr USN Clar ac R. Sowe Lt. USN Jo ph Steg Lt USN Mar hall P Scone tre t Lt. Comdr USN Will m.M. Stronk Lt. Comdr USN Pul Tatt II Lt USN I Thorn, Lt. Comdr USN Edw M. Toml n, Lt. Comd Lockland V Tyl Jr Lt. Comd Henry J Was Lt. USN Herbert L W Iter Lt. Comdr USN Franklin P Ward Lt USA

Medical Corps-Continued

Ge g W Warr Lt. USN

Ala D W tso Lt. C mdr USN

H ber E Yeagley L. USN

Ll yd G Y pp Lt. USN

J m E Wh rd Lt. C mdr USN

G g G Zorn J Lt. Comdr USN Larry E W llugars Lt. USN

Dental Corps

Dental Corps

J hn G Bar sko Capt. USAF
R b t B d y Capt. USAF
Mark B Lt. USN
Ray P B tti L. USN
Ray P B tti L. USN
Ray P B tti L. USN
J ph R Boha k Lt. USN
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J n P Child L. USN
J n P Child L. USN
J n P Child L. USN
J n P Capt. USAF
R hard H. Cord L. USN
T nefl F D ab Capt. USAF
R hard H. Cord L. USN
L and H. Cord L. USN
J h A D J Gapt. USAF
Emm ut A E to Lt. USN
J h A D J Gapt. USAF
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R h Kaufman, Lt. USN
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Medical Service Coms

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Zeb G Bell J 1 t.Lt. USAF
Edgar A Blan C 1 USA
R bert B on dma 1 L USAF
G \$A Bo L USN
Clfto V Bovi Lt.C L USAF
R bert B ms 1 Lt. USAF
Them A Catula Col USA
Them C A Catula Col USA
Austu E Cal Cap USA
Stepb B Col m I Lt. USAF
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J ma A H y I Lt. USAF
Stepb B Col m I Lt. USAF
J ma H y I Lt. USAF
J ma H y I Lt. USAF
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J ma H y I Lt. USAF
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J ma H y I Lt. USAF
J me H H is 1 1 t. USAF

Joh R La deraf Lt. USN

Solomon Heiman Isr Lt. USAF

me D K lly Lt. USN

Milton F. Koepke Lt USN

Medical Service Corps-Continued

William S L grange 1st Lt. USAF Sammy J Long 1st Lt. USAF Daniel F McCarthy Lt. USN Lowell H Mckerley Lt. USN B no mon Miller 1 & LE USAF Rod nick L Newland I t Lt USAF Rodma G Pell tt. 1 t Lt. USAF Robert W Pittenger Lt USN Russell L Pl tt 1 t Lt. USAF John D Prust Lt. USN Bradley B R de Lt. USN Donald L Robertson 1st Lt. USAF Clyd B. Segar Lt. USN Lous J Agnon C pt. USA Louis E Andersen Capt. USA Blanca A Amgones Capt. USA Mildr d I. Batt Capt. USA B tty M Bartz, Capt. USA Ann C. Berley Capt USA Christin H Bery Capt USA Ellen M Bo genh mer Capt, USA Mary I. Bradley Capt. USA Therese M Brown Capt. USA Vitainia N Bugbee Capt. USA Alberta V Carlso Capt. USA Marg nt C. Cas y Capt. USA Coren Chapma Capt. ISA Mary E Cohen, Capt. USA Margaret Co k Capt. USA Mabel H Corbin, Capt. USA Ann B Cost Capt USA

Mary J Dan els Capt. USA

Don K Davis, Capt. USA

Mary A. Doby Capt. USA

Not E Embry Capt. USA

Fra c L. Delton Capt. USA

Lillian M. Enckson Capt. USA

K thi en E. Ev Capt. USA

Dorothy A. Ewing Capt. USA

Geraldene F lto Capt. USA

Margager G. G b Capt. USA

Mirsam & Ginsbe & Capt. USA

P tn ia G Guerrer Capt. USA

Cather R. H garry Capt. USA

Goldi V Hol & r Capt USA Ol ve E. H Capt USA

Anna E E er tt. C pt. USA

V vian Farland Capt USA

Jan P Finney Capt. USA

Eul A Gentzler Capt. USA

Berry J Hall Capt. USA

Helen M Hill Capt. USA

Robert Sharp Lt. USN Eliz beth E Smith 1st Lt. USAF Jam s W Steil 1st Lt. USAF Ioha W Sym as 1st Lt. USAF Joseph C Thompson Col. USA Robert E Thompson Lt. USN Theodore W Tober Lt. USN Duan L Twait Ist Lt. USAF Sunner W tz 1 t Lt USAF R bert O W lt r Capt USA William H Wells Lt. USN Seymour W xler 1st Lt. USAF Thoma F. Wheeler Lt USN F mer H Whitley Jr Col USA John D Wilson, Capt USA Jam F W od, 1st Lt USAF

Nurse Corps

Ann C. J blue vsky Capt. USA Hester M J ckson Capt. USA Jan E Jacoby Capt. USA Jo ephin J J nkowski, Capt. USA H I n M. Kane, Capt USA Mary N Kohlman, Capt. USA Catherine L L vang Capt USA Francis M Lib rty Capt USA Reye tet Lopez Vargas Capt. USA Elizabeth E Lothian, Capt. USA Jo Ann G Ma shall Capt. USA Katherm M Marta Capt, USA M deli M M tso Capt USA Myrtl A McG Capt, USA Rita K M Laman Capt USA S phia Miklas vi h Capt. USA Mat on L M ter C pt. USA Ruth Z. Mobley Capt. USA Felice R. Mo in Capt USA Eul ta O M mison C pt. USA Man I E Mot so Capt. USA Oleta H Nelson, Capt. USA Ethel L N be g Capt USA Syl 1a H. P 1kowse Capt. USA M delyn N. P rk Capt. USA Annie D P xmn Capt USA Vinife dK Phel n Capt. USA Drusill N P ets Capt. USA Remma B Pt C pt. USA Mary C. Quinn Capt. USA Ruth H Reyn Ids Caps. USA Mary Rita Capt, USA L uu M Romani Capt. USA Mildred L Rush Capt USA P trice M Schneid r Capt. USA Al ce M. S hr iber C pt. USA Anne M Schroed Capt. USA P tty E Schuman Capt. USA Elizabeth F Spragu Capt. USA

OFFICIAL DECORATIONS

LEGION OF MERIT

Vic A. By ne Col., USAF (MC) Thom A. Do I y III Lt. (ig) (MC) USNR Edwin D. M M en Lt Col MC USA G IS B F ot Lt. C I DC USA Jam T J h so C L USAF (MC)
Ch I L Kukpa & Col MC, USA VII mH L won C I USAF (NC) William E Leonb d C L. USAF (DC)

E LL w1 M J MC USA D d A. Myer Col MC USA Har MA. Str C and (MC) USN Caldw II J Stuar C pt. (MC) USN Ralph F. Sw et C 1 USAF (MC)

SILVER MERIT

Earle S and I M | Gen MC USA

BRONZE STAR MEDAL

Eugen M. Bak III., Cap MSC USA El beth C. Jon M J WMSC USA
Will m E Ca d beny J Capt. MSC, USA J ha H Wh tak Lt C 1 DC USA Will m C. Dun k ! J Cap MC USA Kathry G W er Lt. Col NC USA Sally C. H v M | NC USA

COMMENDATION RIBBON

Jul M. Ambe os Comdr (MC) USN Sam IE Andr w M J USAF (MC) F de k O Bowma 1 L MC USA Wood A Car Cap MSC, USA Phil p E. For 1 Lt. MSC USA Gladon C F Capt. USAF (MC) Ann I Goods h C pt. NC USA Henry V Gulf th C pt. MSC USA Man h R H Ibo ty Col., USAF (MSC) Z L. McCl key Lt. C ! USAF (NC) E te M Wil on 1 L NC USA Mary C. McH gh 1 L NC USA

Arthur S N mrys, Capt USAF (NC) Jh A. N & L C L USAF (MC) H 10 d w C p NC, USA R ben C. R 1 Lt. MSC USA Lill B Rundell M + NC USA Jh S Stehla J Capt. USAF (MC)
Will m G S mm 1 Lt. MSC USA Joh N Todahl 1 L USAF (MSC) CI II J Wandh sa, J Maj MSC USA

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- Aw ded by th Army
- Aw dp se dby Swed hRdCr by order fKigG tavu VI The name fif fhemed I while be will did or may the U dista Army Nayor A: F phlished bdpm flby th. U d Sta Army Nay or As F

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DEATHS

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Reviews of Recent Books

MEDICAL EMERGENCIES Diagnosis and Treatment by Francis D Murphy
M D F A C P and five associate authors Foreword by George
Morris Piersol M D 5th edition 603 pages illustrated F A Davis
Co Philadelphia Pa 1955

This book which is in its fifth edition presents the acute conditions and medical emergencies most often encountered in the practice of medicine Verbose discussions on the etiology and pathology of the described conditions have been avoided while the diagnosis differential diagnosis and treatment of these diseases and emergencies have been emphasized. The current methods of carrying out the suggested diagnostic and therapeutic measures are described accurately and in adequate detail.

Each chapter covers acute conditions pettaining to a single system or a specific type of emergency such as acute poisonings and all chapters have been brought up to date in all respects. The chapters on blood dyscrasias have been rewritten and many others have been revised. The discussion on the bacterial infections and the antibiotic drugs is current and is well presented.

This book is well written and edited It is enthusiastically recommended to every practicing physician but particularly to general practitioners—RALPHI D ROSS Comed (ROG) USN

CARDIAC EMERGENCIES AND HEART FAILURE Prevention and Treatment by Arthur M. Master M. D. Marvin Moser M. D. and Harry L. Jaffe M. D. 2d edition 203 pages 14 illustrations. Lea & Febiger Phila delphia. Pa. 1955. Price 33.75

This beautifully written handbook gives sufficient brief information for the prompt diagnosis and proper treatment of cardiovascular emergencies. These emergencies are criming fool tens to the peneral practitioner in civilian communities and to the peneral practitioner in civilian communities and to the peneral practice in the Armed Forces. This fool is for that use and not for the use of the trained cardiologies, person in for the trained cardiologies, person in the trained cardiologies, person in the trained cardiologies, person in the trained cardiologies, person in the trained cardiologies, person in the trained cardiologies, person in the trained cardiologies, person in the trained cardiologies, person in the trained cardiologies, person in the trained cardiologies, person in the trained cardiologies, person in the trained cardiologies.

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and crises of pheochromocytom ds ecting aneutysm and trumatic beart disease are covered briefly with short pref rential statem nts f treatment

The illustr tions are adeq to except for the scarcity of electro cardiograms however the auth is do not purp it to d scuss electro cardiography in deta 1. Th. book is well index d a d has a most complete bibli graphy

This thin pocket sized hadbook hould prove of volume the office fany general practit ner of spicial to their thin a card log stallthough the a thore reconservitive they use little new rim thous that reappoprate and promise better result without incleasing the rasks to the pit in the ADRACE Courso C I MO USA.

FLUOROSCOPY IN DIAGNOSTIC ROENTGENOLOGY by Ott D t b b g M D w h trod ton by Fra k J B m ll M D F A C R 771 page 888 ll strat on 523 f gur W B S und C Ph l d lph P 1,755

This book reve is the potenti is and limitations of fluoroscopy and omples es entil k owledge on the subject i to a singly lime. It is un que in that it apparently is the only one written to cover this method if study in all bottons of the body.

The early chote deal with g eral spects of the solvet with a decretion of pp ratus for image amplificat n and warious oth rupes of equipment There i a workable discus on about the loc lizatin of foreign bodies with fluo copic mithod. In the sections d void to exam nation of the vito regions of the bidy the chest ndg stoint stinal tact review major the to and both discus n make f vely worth while reading. The head spinal cinal ne k and urologic I tact ale discussed in the extremities.

A larg numbe of photog aphs fxrays re included Th se ha e been ep oduced a excellent postie prints o that one may vilize the prints a tis seen o the fluo oscopic screen Ther is a long bibligriphy at the end of each chipter ind the ind x appears to be adequate.

The book : well we th read g by the student r d log st and by all who hav occasion t fluoroscope the chest a d bdomen

-CLEMENT D BURROUGHS Capt (MC) USN

SURGICAL FORUM Poc d gs f th Form S ns Forti th Cl c l
C gr f th Am r C ll g f Surgeo A la t C y N J
N mbe 1954 V l me V 851 pag llustrat d W B Saund C
Ph lad Johns P 1955

Tho e who are terest d in the trends that surgery in Ame ca if flow ng sh uld ead this an u lly relea ed Surgical Forum Wide cove ag is obtained a evidenced by the 393 a this represented. The articles is all short a eriging from four to five piges and their

by lend themselves to a rapid easy digestion of their contents. The illustrations are exceptionally clear and numerous and the bibli ographies brief and basic.

It is not a book that can be easily read straight through There are 10 main divisions under which relevant papers are grouped This gives it a breadth of appeal to those in the surgical specialties that few volumes can claim

One is impressed by the great amount of effort that has been focused on cardiovascular problems. About one third of the space is devoted to these papers. Much effort is still being applied to the old problems of the peptic ulcer and its many ramifications. Particularly fascinating to me are the many papers devoted to the steroids and their relation ship to cancer and surgical endoctinology. The introduction to this section by Dr. Francis D. Moore is particularly stimulating.

Any surgeon involved with teaching or research should be familiar with the contents of this volume —MAX L SMITH LI Col MC USA

OBSTETRICS by P Greenbill M D 11th edition 1 088 pages 1 170 illus trations on 910 figures 144 in color W B Saunders Co Philadelphi Pa 1955

In his second revision of DeLee's classic text on obstetrics Dr Greenhill has combined his conservatism and perception with a wide knowledge of current literature to add much new data on many subjects including physiology of the fetus and newborn toxemias of pregnancy abruptio placentae hemorrhages associated with fibringen lack puerperal infection choriocarcinoma asphyxia et cetera

There are entirely new chapters on roentgenology in obstetrics analgesia and anesthesia fetal erythroblastosis and the Rh factor diseases of the nervous system induction of labor and prolonged labor A special chapter on endocrine changes and diseases during pregnancy is included

This is an excellent revision of a standard classic work which is fully abreast of obstetrical research and current advancements in technic and treatment It is recommended as a necessity for the library of all those interested in this subject

-ELWOOD L. WOOLSEY Comb (MC) USN

COLD INJURY Tran action of th Third Conference February 22 23 24 and 25 1954 Fort Chu chill Manitoba Canada Edit d by M 1ee F rer M D 226 pags I lut rat d Spon ored by the Josa h Macy Jir Fou dat on New York N Y 1955 Printed in the United States of Ame ica by Madi on Printing Co Madi on N I Price 14 50

This monograph presents edited notes of discussion by conferees who are primarily interested in the physiologic and pathophysiologic effect of cold on man and experimental animals. The title of the conference is a misnomer in that there was no discussion relative to cold injury per se

Whether or not one subser hes to the concept of neurodermatitis he cannot help but be intrigued by the author's presentation and while Dr Ob mayer cont no ly emphasizes the importance f psychic factors he does not fail to warn that other influence mu t receive due weight As he says Nothing is more detrimental to p vehocutaneous medicine thin willingness to ascribe almost any infl mmatory derma tosis of unknown cause to emotional tens on. The reviewer prees that uch a ready esc pe mech nism is the great handic p of the concept of neurod rmaticis

The idea of an emotion I component in sich conditions is allergic eczematous contact type dermatiti geogr phic tongue d syco is vulgaris may be a startling to other as tw s to the review r The bibli graphy is exten ive The work is recommended a worthwhile ba ic tudy to 11 who deal with possible psychocutan ous disease

-CHARLES D BELL, C bt (MC) USN

THE YEAR BOOK OF DERMATOLOGY AND SYPHILOLOGY (1954 1955 Y B k S) Edit d by M 1 B S l b g M D d Rud If L

Ba M D 472 page 59 ill trat Th Y B k P bli h

I Chi go Ill 1955 P \$6

This Year Book contains abstracts of articles from journals received from Dec mber 1953 thro gh November 1954 Its circul ton e tends to many cou tries dits subject matter deals with the reporting and naly is of signife nt advanc s n i ternat on I derm tology. The volume has a well sel or d set of pe time t llust at us a compre bensive object index dia convenie trauthor and x

the 24th c nsec ti e volume of the Y r Book of D ma tology and Syph lol gy which the sen redito h s helped to la nch Dur g th se ye r th speci lty of derm tol gy h s gown geatly in diversity depth so be and stature in addition to the valle of the ab tracts of inter ario al d'imarologic l'i r' ture a d'their remo al of language barr fr tho e who cannot readily re d fore gn langu ge two mport nt fe ture of this text have alw y had great appeal fo the r vi wer (1) The i troductory chapter by the ed tors e ch yea devoted to a rev w of one perti at s bject Thi year th y re iew om tec nt advance n derm tolog c mycology in the fields of tie ped s tr chophyton r brum infecti ns t nea c pitis and m n lia is (2) The an lytic comments on betracts of the lt r atur mad by the edito's at the end f may report of articles. The e are of parts lar v lue b ause they reflect the wd experience of the ed to esp cally of the entor ed to n out tand ng clini tan te cher and nvestie to

This volum is a v luable and usef ! dd t on to the ! brary of e ery dermatolog st nd of ev ry ho pit I with d rmatol gy department

-FRANKLIN H GRAUER C I MC USA

THE THERAPY OF SKIN TUBERCULOSIS by Gustav Reebl M D and Oswald Kopf M D Translated and revised by E nest A Strakosch M D Ph D American Lecture Series Publication Number 229 A Monograph in The Bannerstone Division of American Lectures in Dermatology Edited by Aribw C Curl s M D 247 pages illu trated Charles C Thomas Publisher Springfield II 1955 Price \$6 75

This monograph is especially useful for dermatologists and other physicians treating tuberculosis of the skin Therapy is discussed under the following topics. General supporting therapy vitamin D therapy antibiotic therapy chemotherapy tuberculin therapy and physical and surgical therapy. Fvery conceivable method for the treat ment of skin tuberculosis is presented in detail. The latest methods are described including the use of vitamin D2 streptomycin PAS and isonicotinic acid hydrazide. The literature is covered in an encyclopedic manner giving more than 300 references.

The manner of approach is first a general discussion then references to the literature and discussion of the import of the articles concerning that particular subject. This is followed by summarization of the use fulness of the drug or method used based on the literature and the authors experience. Although the photographs are few in number, they are clear and illustrative. This book deserves a place in the library of every dermatologist and specialist in tuberculosis.

-LOUIS S LELAND COL MC USA

AN ATLAS OF MUSCULOSKELETAL EXPOSURES by H F Vosel y D M M Ch (Oxon) F R C S (England and Canada) F A C S 235 pages with 376 ill strations in color and 30 figures in b1 ck and white Ill strated by H len T MacA thor B A with 5 plates by F anh Nette M D J B Lippincott Co Philadelphia Pa 1955 Price \$2250

This volume correlates detailed anatomy and surgical exposures of the face upper extremity vertebral column and lower extremity. The standard exposures depicted are those commonly used in orthopedic procedures and the surgery of trauma but they also are applicable to neurosurgical and plastic procedures on the parts involved

In its field the book is unique in that it employs to a great extent the diagrammatic use of color in an unusual method of presentation. The illustrations are arranged to show anatomic structures layer by layer from the sl-eleral framework outward to the skin surface. Then reversing the process surgical exposures are illustrated from super ficial to deep planes as viewed by the surgeon in the postured patient. Fach full page color plate is conveniently accompanied on the opposite page by an adequate descriptive text serving to correlate the theoretical with the practical considerations and to indicate the various points in order of relative importance. In many instances the illustration and description go beyond actual exposure to detail certain operations and the lesions involved although the volume is not an atlas of oper attive procedures.

I addition to the color pl tes th re are imple line drawings and black and white photographs. The former llustrate the area of skin preparation required for each exposure and the photographs show the actual posturing ind success ve steps in drap ne patients

The sect on on the face includes exposures of the temporom adibular sount the mandibl and the malar maxill ry and nasal bones The upper extr mity section cont ins xposures related to the clavicle shoulder joint sc pula humerus elbow joint radius and ulna wrist in t and ha d Simila ly the surgical exposures of the lower extrem ty from h p to foot are included In the trunk section exposures of the vertebral column fr m the cervical vertebr e to the coccyx are prese ted along with exposure for cervical rib and the acro-liac joint

Pertinent references follow each section and there is an dequate index This atlas hould pr ve valuable pr marily to orthopedic and Surgic I to idents -HARRY L. DEIN LI Col MC INA

DENTISTRY IN PUBLIC HEALTH edued by Wite J Pit D D S M S P H d J b M, W n, D D S M S P H 2d d tu com pl t ly d d writ 282 p g llustr d W R S d Co P 1955 Pr Ph I d lob \$6 50

This edition adds five year of t sults concir ingidintal health since th fit ted to n in 1949 The 10 exc lient chapters are compiled individually by the two ditors and their collaborator each chapter selective to e h author s vast backg ound of investigat The ch ets and illus trations are clearly rept due d in black and where

Public he lth and tatistics re synonymous in many readers m nds how ver this i not the situ t on p sented by this b ok How to interpret st tistic and how to comp le t tistics are pres nied but n most instances the dent I statistic hav ben condens d to short inter e ting facts

Both sides of today's controver ial dital problems are expertly presented This is especially true in the chapter discussing peri dontal diseases and treatment in which the author very delicately in presentation permits the most biased reade to become aware of preponderant amount of evidence to prove conclus on for himself

The book 1 useful to the m litary dentist responsible for large group of dental patients. The vast number of compiled bibliogr phies make this book valuable to my distinct preparing I that aruse or investigations of a dental n ture

The pri ary purpose of the book to aid n establishing dental public health courses and oral hygiene programs as well as d tal health investigation This book should also prove of value to each practic ng denti i bec use dental public health is e ch dentist s respon s bility Students of dentistry and in allied fields such as a trition or b ochemistry can readily benefit from this refe ence textbook

PRACTICAL ORAL SURGERY by Henry B Clark, J M D D D S 392 pages 223 illustrations Lea & Febiger Philadelphia Pa 1955 Price #8 50

This text is a teaching aid for the dental student a method of continuing study for the graduate dental or medical practitioner and a solid review for the oral surgeon. The material is well developed be ginning with basic concepts of definitions preoperative considerations, care and management of physical facilities and instruments and proceeds to various oral surgical and diagnostic problems. The volume ends with two excellent chapters clarifying hospital practice and the art of practice.

Clear illustrations make understandable the basic procedures positions and technics of exodontia and minor oral surgery. Subtitles are used in each chapter. Whenever feasible sentence outline form is used which adds to the usefulness of the text as an everyday working aid.

The chapters on basic oral surgical technic and postoperative care and complications are worthy of detailed study by the dentist doing excolonia regardless of his background. The writing reflects the mature judgment of the author and any criticism of the book must be confined to relatively minor matters. The lack of a detailed bibliography is noted, and the lack of a chapter on anesthesia is felt.

The author has produced a textbook worthy of the excellent work his group is doing in the field of oral surgery. It is a practical text without being synoptic and without overloading the student and general practitioner with too weighty a reference work.

-CHARLES C ALLING Maj DC USA

OPEN WIDER PLEASE The Story of Denti try n Oklahoma by J Stanley Clark. 391 pages illustrated University of Oklahoma Press Norman Okla 1955 Price \$5

This story of dentistry in Oklahoma begins with the early 1880 s. The author describes its growth and development from territorial days to the present time including the problems that arose incident to the mobilizations during the two World Wars. He also discusses the future aims and interests of dentistry in Oklahoma.

The book records in much detail the history of legislation affecting the practice of dentistry and the licensing of dentists dental hygien ists and dental assistants the organization development and activities of territorial state and local dental associations and the successful search for improved standards of professional training and ethics. Hundreds of dentists who tool part in these activities are men tioned with full names addresses and offices held carefully recorded and frequently with good descriptions of the individuals and the stand each tools on various issues

The book has a bibliography an index and 26 appendixes. The appendixes include a roster of all dentists who have been licensed in

Oklahoma of off cers of the State Dent I Ass ciation of dental hygen ists of dental ass stant of Bo rds of Dental Ex morets a d of Okla hom dent sts who served in the Armed Fo.c. &

This is a bo k that mo t Okl homa dentists will want to read and keep as the sto v f their b plession in their Stat

-CHARLES M. FARBER C 1 DC USA

PRACTICAL MEDICAL MYCOLOGY by Edm nd L. K. y M. D. Am Le ur S r. P. bl. cut. N. mbe 248 A. M. graph in Am. c. L. tur. in I r. m. l. M. d. Ed. d. by R. oe L. P. ll. M. D. L tur in I t m I M d F A C P 145 pag ll trat d Ch le C Th ma P bl h Sp gf ld Ill 1955 P \$4 50

In an er wh fungus dis a es re b oming r p dly more mportant the mill a d asily radable monog aph is most timely it i well witt n and prese to a diff cult s bject in a Pactic I concise factual manner Th autho an expert in his field considers par tely each of the mpo ta t recogn zed fu gus d seases in m n Hi tor cal back gro d geographic distribution key of moal fe tures labor tiry identification of et ologic agent mycology immunolog c f atures progno is d tr atment re well p s nted Tw mall ch pt rs n fungus spor as all gens and on the ol of po ono sf gi sa cause of mushr m po ig and erg t sm cluded The m e import nt fu gus dis e ses each h v an excell t diag mm to llustatin summ izing the ep dem logic clinical indidiage tic features aid the diffe nt ld go s

The o ganizat on of the bo k with its thorough index m kes f anid The bbl gaphy includes valuable rece t co tri butions n dd ton tom ny clasic aticles dit g back to the latter po t on of th n teenth century

It is seld in that a smill book fifth type contains in much or critical inform tio. It admirably serves its purpo e in providing understa dable ad cocise m ter I for th stude ad pret tion

-RICHARD I CRONE C I MC USA

THE YEAR BOOK OF ENDOCRINOLOGY (1954 1955 Y B & Se Edid by Glbt S Godan, MD Ph D 392 pag ll rad Thy BkPblh In Chg I^{||} 1955 P \$6

Thi se thook offers the us al compr hensive dexc llent new of s lected c nt but; s to th current year s l te ture in the subject of indocrinology. The orginization of thico te ts i bally the same as that of pr ious years Th a e nume us ill st tio to ampl fy the write data

The Ye r Book of Endocr nology serv s the mpo t at role of h ving o volum well selected a dexc ll tly summ r zed cont butions of It rature e door not gy for the urent year. Those interested in the subspec liv sho ld hav the publication that library

COLLECTED PAPERS OF THE MAYO CLINIC AND THE MAYO FOUN DATION edited by Reba al M. Heut It M. A. M. D. A. B. Nevl. ng M. D. John R. Mne. Sc. D. James R. Eckman M. A. Ph. D. M. Katb a ine. Sm. Ib B. A. Carl M. Gambill. M. D. M. P. H. Flo ence. Schmidt. B. S. E. a. d. Georg. G. Stilw. Il. M. D. Volume XLVI. 1954. 843 pages. Illustrated. W. B. Saunde. S. C. Philadelphi. Pa. 1955.

The editors state that they selected the material in this collection with the interests of the general practitioner the general surgeon and the diagnostician in mind adding that material representative of the specialties and the basic sciences has been included in order to present adequately the work of the Mayo Clinic and the Mayo Foun dation. Six hundred and twenty nine papers are represented. Of these 134 are presented as abstracts or in greater detail. The inevitable result is an extremely varied selection of subjects involving most branches of the medical sciences.

The papers are grouped in sections according to anatomic systems with separate sections for radiology physical medicine anesthesia and miscellaneous subjects which include among others one paper on fevers of unknown origin and several on technics of medical illustration

As an obvious result of editorial policy didactic and review pa pers predominate Subjects of perennial and current interest are represented in writing that is interesting and lucid Unfortunately the original bibliographic documentation of the papers has been omitted. The volume will be of particular interest to those interested in current surgical and medical thought and practices at the Mayo Clinic

-JOHN K. SPITZNAGEL Maj MC USA

CIBA FOUNDATION COLLOQUIA ON ENDOCRINOLOGY Volume VIII The Human Adr nal Cotex by editors f the Ciba Foundation G E W Ist inholm O B E M A M B B Ch and Mu ga et P Car non M A A B L S s st d by Joan Eth rungt n. 665 pages 227 illus trati ns Little Brow and Co Boston M ss 1955 Price \$10

This is a report of the international symposia on the human adrenal cortex held in London in April and June 1954 the eighth in a series of conferences on endoctinology since 1949 under the auspices of the Ciba Foundation

An outstanding group of conferees all of them leading clinical and laboratory investigators in their several fields presented a total of 35 papers relating to the adrenal cortex. Each paper was followed by a free discussion notable for its intimacy and informality Penetrating questions and remarks during the discussions were freely made and honestly answered In this volume every aspect of the hypothalamus pituitary-adrenal axis is exhaustively considered from the histochemical reactions to the purely clinical features of the normal and pathologic physiology of these structures

It is difficult and at times tedious reading due to the presupposition by the authors of intimate knowledge of steroid chemistry exper mental methodology and complete familiarity with the wild liter ture on the part of the reader It is not a book for casual perus I An extensive bibl our phy and a highly complete index make this work of encycloped c value for the student of the drenal cort x

-RORFRT K MOXON Lt Comd (MC) USN

THE HYPOPHYSEAL GROWTH HORMONE NATURE AND ACTIONS I t nat I Sympo m pon d by th H ry F d H p ral d Ed I BFdItttf Md lR hD t Mh dhld t th H p 10 t be 27 28 29 1954 Ed or R bm nd W 5mth J MDOI HG bl MD dC NH Lg MD 576 pag ll trat d Th Blaki D MG wHIIB kC I N MG wHIIB kC I Nw Y k N Y 1955 P

This book is the edit dit cript of an internation I sympo ium the editing of all paper and discu ions h ving been d e by the three editors r ther th n individu lauthor n the int rest of sp edy oublet n

The participants the conference cluded most fithe in stigators in the world who have de or ar des griff cat with it field The d t nd opinions ther fore con titut an authoritati e nd un tod te survey of the present t tus of growth hormone s well s of r ce t ad noes n knowledge nd in estigative technic. The piper are g ped 1 to eve I general felds with distinguish d invest g tors who h ve p cial inter st i th se felds des enat d a d s cussor

Thi me ting wa a mp rt nt rese rch e ent nd the discu sion were on a d talled technical friquently abstius 1 1 that do in t make asy te ding nd is of little te est to clinic l practiti ners The volume s moort at how wit to tese rch workers in this and flied fields and to medical librar e as a reference wo k

-CHRISTIAN GRONBECH LE Col MC USA

NEUROPHARMACOLOGY Tra t fth F t C f 26 27 d 28 May 1954 P t N J d d by H ld A Ab ms M D Sp d by h J h May J F d t N w Y k N Y 210
page II trat d P d by Mad P t g C Mad N J \$4 25

The e published conferences devoted to spec al ubjects n the m di al feld re well known fo the rexcellence a d th s one n exceptio. These who is interest den neurophysiology or neuropharmacology will f d th's book parti larly informati e There i cl ar present tion of prog ssive rese ich by the uthoriti s themselve plus nterspersed omm t and discussio by d ti g shed I ted nd nterdi c plin ry f eld investigators

This volum elicidates some of thi more signific nt efforts i neurophys ologic r ea h the p st few y as Appr pri tely th first discuss on 1 by Dr S ymour S kety o Consid ati ns of th Effects of Pha macolog cal Agents on the Ore All C c lation a d Metabolism of the Brain. Such matters as cerebrovascul... resistance vasospasm oxygen carbon dioxide glucose drugs and amiety are taken up Dr Ernest A Scharter follows with a chapter called Functional Organization of the Brain in which he emphasizes the variations of cerebral blood flow and the variation of chemical characteristics in different parts of the brain

Dr. Mary A. B. Brazier indicates in Studies of Electrical Activity of the Brain in Relation to Aresthesia that there are different origins or pathways for the electrical activity observed at the cortex. This is followed by Dr. Horace H. Magoun's Ascending Reticular Systemand Anesthesia. The arousal response and the effect of anesthesia on the central cephalic system are considered Finally. Dr. Carl C. Pfeiffer presents Observations on New Certral Nervous System Convulsants. He discusses the convulsant hydrazides and the possible sate and mode of action of convulsants.

In addition to the references given at the erd of each chapter the book contains an interesting appendix Autobiographical Sketches of Participants —ARTHUR J LEVENS LL Col MC USA

SHOULD THE PATIENT KNOW THE TRUTH? A Response of Physicians Nurse. Cle gymen and Lawyers Edited by Samuel Standa d. M. D. and Helmath Nathar. M. D. 160 pages Springer Publishing Co. Inc. New York, N. Y. 1955 Pric. 33 hard cover 23 soft cover.

Twenty four experienced professional people with ex ensive clinical experience each portray in this book the circumstances and problems arising when a diagnosis of a fatal disorder is made and the question of communicating this fact to the patient or other responsible persons becomes necessary. How much of the tru h should be told who should tell it and in what manner and the many weighty issues involved are described in separate chapters by sugeons internists psychiatrists nurses of various specialties clergymen of different fai hs and experts in law Each describes how every situation must be individual ized. The total person must be taken in o account in fermula ing an approach that will not only discharge the physician's responsibility by permitting the pa ient to krow the truth in time but that also will not agravate his condition or prevent him from doing those last things which he needs to do

Despite what may seem to be a morbid subject the autho's and contributors have developed practical and penetra ing expositions of significan situa ions that could a ise. The tender and deeply intuitive insight shown by contributors from the nursing profession in the cases of children and psychotics are welcome and helpful.

This practical volume should be in every physician's library and should be required reading for studer's of medicine law ministry and the priesthood. It is a book to be read and reread Profound values are tactfully touched on in many of the cont. butto s papers suggesting that an a titude of reverence for man and his needs is a dependable

g id noe t be four d in the p ges of the book

hallmak of those be t equipped to ca for them The xpre ced physic not be beginner and all who care for the II can profit from the

-PAUL I SCHRADER LE C ! MC INA

AIRBORNE CONTAGION AND AIR HYGIENE A E 1 g 1 St dy f Dr. pl
Inf toon by W ll m F tb W ll 423 page 11 trat d Publ h d
f Th C mmo w 1th Fund by H vad U er ty P Camb dge
Mas 1955 P 45

Thi monograph details the d clopm nt of knowledg of au bom contag on from c o din ted and syst mat c seearch appr aches over the p st 20 years. It docume t ind synthes z s the elidence into clear principles many of which are explesed quantitativity and points up the relegion of san tary vent lation in the dynamic contribution of aut bo n contag on Vethods of pur fiction by sintary vent lation or by use of ultrail tora most of a terminative difference of the process o

Although this work is ba ed strongly on mathemat cal expressions of the dynamics of contagion and a puif C to it is so well org in zed and dev l ped th the hip to stell a connicted stry in dipresent a l cid description of an hygiene that a layman can under tand. Other hip ters are so complete as to att fy any stud into the bodynamic in olved. The epidemiologist or any physician faced with the problem of preventing air boine conting will find this monograph a viluable efference book, illumin ting his thinking about the blodgy biophysics and bis chemistry of droplet in let infection and disinfection in the roll of santiary vitilation in occi of line air bor epidem cs.

-ROBERT W BABIONE Capt (MC) USN

SOME PHYSIOLOGICAL ASPECTS AND CONSEQUENCES OF PARASITISM d d by % llum It C t 90 pg 11 tra d R ge U sy P N w Bru w k N J 1955 P \$2

This book consists of piers pinted it his let he the C fe e Potein Metaboli mat Rutgers U i ersity. Thy cincern c lti ation a Jintt to potei mit bolism this specific nature of en jiers of some par siti poto o a d hilm nths a d antibody firm tion in a fected hit.

Invest gatio were epoted by Tr ger Moulder Read Beding Tlfood Srab This gropf tudies represer to signpost point ng nthe diretion of nw teritory yet to be ongered (the phy iolgy ndboch nitry of prstsm) rather than felds that hae been rose tho eably trested—CLATG SUFF

ETIOLOGY OF CHRONIC ALCOHOLISM by O ka D th lm M D 227 page llus ra d Cha le C Th ma P bl h Spr gf kd Ill 1955 P \$675

The rs chomonograph rpr ent the results of a 5 ye r joint study by gr up of phy icians physologists chemists psychologists sizal selection anthropologists and psychiatrists. It presents the

etiology of alcoholism as a complex one with multiple mutually dependent variable factors which may play important roles. It stresses the point that alcoholism may not be a primary disease but a symptom of other illnesses that must be understood before proper treatment can be instituted. Proper therapy of each individual patient requires an understanding of the total personality within its biosocial and biophysical environment. The authors point out that the present studies must still be considered as initial observations and that further in tensive studies of all factors are essential. The multiplicity of the factors involved indicates why no single specific treatment of alcoholism has been derived.

Excellent chapters on the Psychopathology and Character Structure in Chronic Alcoholism by Dr. Mary Jane Sherfey and the Familial and Personal Background of Chronic Alcoholism by Dr. Manfred Bleu ler are definitely worthy of serious study by both investigators and therapists of alcoholism. The section "Biochemical Experimental In vestigations of Emotions and Chronic Alcoholism in Primarily a scientific statistical presentation of biochemical factors that only the true researcher can grasp. The interesting account of Alcoholism in the Cantonese of New York City" presents a biosocial approach relating to cultural and familial attitudes toward the use of alcohol. It fails to present any real investigation into those members of this society who may have become alcoholics.

This monograph should be recognized chiefly as a contribution to the necessary research on chronic alcoholism and should be available for persons who are sincerely interested in chronic alcoholism and the chronic alcoholic—LUCIOE GATTO Gol USAF(MC)

RADIOISOTOPES IN BIOLOGY AND AGRICULTURE Principles and Practice by C L C max 481 pages illustrated McGaw Hill Book Co Inc. New York N, Y 1955 P cc 49

The stated purpose of this book is To bring home to the student and investigator an appreciation and understanding of how radio isotopes can fit into their program and then to show how the experimental work can be undertaken. The volume is directed primarily to the biologist and examples cited are those of interest to him Limit ed portions of the book deal with medical applications.

The chapters concerning principles and basic difficulties of tracer methodology are particularly well written and will be of value to anyone interested in the general field. Throughout the book emphasizes various problems that can be solved through the use of isotopes. The untor has compiled an excellent bibliography to emphasize particular applications to certain fields of interest.

A listing is included of isotopically labeled preparations provided by the Oak Ridge \ational Laboratory but for up to-date information the investigator should refer to the catalog and price list published by th Atomic Energy Commission Ch pters on autoradiog phy paper chrom tography a d ion excha ge intoduce the basic principle of these t chaics

The book will ploved a good indoctrination to the student in the fi ld of sot p s However the investig t r will require direct reference to the lite atur - IAMES B HARTGERING LI C I MC USA

THE ROLF OF HUMORAL AGENTS IN NERVOUS ACTIVITY by B un M nz MD Am Lut S Pbl t Numb 240 A M graph t Ba D f Am L tu Ph ma l gy Edt d by Cb y D L k Ph D 230 pag 11 trat d Ch l C Th ma P bl h Sp gf ld 111 1955 P \$7.75

Prof sso Minz his written monograph on a highly contro er ial subject In ome 200 pag s th uthor well known n estig tor in the fild ha attempted to claify om of the confused das ab t the role of hum ral gents in nervous cti ity He shild be co gratu I ted in his handl g of d lie te bie t matt which ha th last half c ntury been filled with dre ms v gue hypothese theores person lity of shes and much varied experient ton H makes a honest effo t to be witho t bia gi i g cred t where cred t i d e but st ll m intain g h s own i tegrity a d b li fs

This short term kes too ible fayby scent stin or o tof the fild to obtain prior mic ien fith subject as tist nds tod y The ader my the feel s th re we d s th t the monograph r mula t for further rese 1ch

The book is hard om ly bound writt n person l tyle ea y to r ad nd contag f gures from the r g n l experime ts It will find a seful pl c 1 a y b ologic l b ary

SHEARER S MANUAL OF HUMAN DISSECTION did by Ch I E T b n, Ph D 3d dt 287 pg 79 fgur Th Blk MG wHIIBook C I NwYk NY 1955 P \$6

-ELGFNE B KONFCCI Cap USAF (MSC)

The minules offered to mid cale tude to as a laboratory guide a te thook of anatomy and supplemental collater I reading in one f the st d rd desc pt ve texts is recomm nded by the ed tor For the s me r a th ma al will ot m et th needs of the speci list tudy, g the d t iled tructure of particular o gans

O ly m o cha ges a d a few dd tons h ve been made in this third dit on The miter 1 s will orginized indipresented according to body eg Thi pe mit adaptat on to meet different plans of instruction. The tyle is concile the directions for dissection a clea the illu trations re dequite for their purpos and the fo mat with import nt terms pr ted in bold fice i espicially designed t help the student while carrying out his diection. As a guide this manu I fulf lls its miss on and c n be highly ec mm aded for use by med c 1 students -ARTHUR STEER LL C I MC USA

ANCIENT THERAPEUTIC ARTS The Fitzpatrick Lectur delivered in 1950 and 1951 at the Royal College of Phy Icians by W Iliam B ockbank M A M D (Camb) F R C P 162 pages illustrated Charles C Thomas Publi her Springfield III 1954 Price \$5

The subjects chosen for these four lectures were enema administration cupping and leeching counter irritation and intravenous methods of giving drugs. The author outlines the history of each form of treatment from its earliest recorded use in the case of the enema for example from about 1500 B C B; quotation and anecdote he adds considerable interest to the narrative and introduces a certain amount of humor. An outstanding feature of the book are numerous illustrations from o'ld nedical texts and from objects in such great collections as the Wellcome Medical Museum the British Museum and the Royal Colege of Sugeons.

The publisher's reproduction of the illustrative material is remarkably fine and the little book is almost a small atlas of the subjects of the lectures. Another important feature is the excellent bibliography at the end of each lecture giving a rather extensive list of both articles and books dealing with the subject. The binding paper print and even the book jacket are excellent. Most medical men and many laymen will enjoy this book and the numerous illustrations that form almost a pictorial history of these ancient therapeutic methods.

—LOUIS H RODDIS Capt (MC) USN(R t)

COUNSELING IN MEDICAL GENETICS by Sheldon C Reed 268 pag s

W B Saund Co Phil delphi Pa 1955

A monograph of the practical approach to problems in genetics could come from no source more qualified than the Dight Institute of Human Genetics which has contributed so greatly to the study of hereditary diseases. This text serves a twofold purpose first to remind the reader of the necessity of correctly advising patients and parents on questions of heredity and second to provide factual information on Counseling in Medical Genetics

The author exhibits a comfortable style that is informative as well as interesting. This text is concisely written in an easily readable format. The more common genetic problems are discussed individually with a question and answer session at the end of each chapter. These sessions help to clarify the discussion in a brief and stimulating man ner. Important information is presented by tables that deal with state laws guidance centers and blood grouping. The appendix presents a catalogued summary of each hereditary disease. An excellent bibliography and an accurate index complete a well edited bool.

This thesis is of definite value to anyone whose practice deals with either newborn infants or with an active obstettic service. It may be used as a desk reference for correctly advising prospective parents. However as a genetics text additional fundamental and theoretical discussions would be of value—PETER # SCHAEIDER LI Comb (MICHEN

g M D d L ll A Sb ltts R N M S 10 b d ts page 329 lt tt 1 d g 10 b SURGICAL NURSING by Eld ulg L El cl IBLpp Phidinh P 1955 P \$4 75

Thi well written volume should serve as an excellent textbook and frame of reference on the nur ing c re of p tients underg ing surgic [treatment. It w s wr tten prim rily to pres t to the nurs ne student a concept of the comprehensi nursing care needed by these patients The a thors have striven to a culcate an appreciation of the tot I care of the patient based on an awareness of his soc al mental phys ical and spritti I needs

The book is div ded into units coording to the functional divisio s of the body. The newer adva ces in cardiac and chest surgery at clearly described with emphasis gi en to the apecial nur ing problem encountered

The ge r l present tion and art ngement of the m terial make for e sy re ding and reference At the conclus o of e ch ch pter a clinical tu ton is pre ented with se eral rel ted questi s and possible answers. This new f atur should see as a review and consolidation of mport nt spects in surgic I nursing care. An excellent bibli graphy is located at the concl ion of each nit these are arr need by ubject for e sy refer nce

Although writt a primar ly for the tudent nur e the text off is the instructor in surgical nursing solid guid it off is the professional a review of the field and it offers the subp fess onal student and worker a re dy ref rence. The auth is have succeeded in cont ib t ne a w rth while a thor t tive w rk to the nurs ng fi ld

-RUTH L GREENFIELD C at ANC USA LABORATORY EXERCISES IN ANATOMY AND PHYSIOLOGY by Dor thy

Wilton Prry BAMA 158 pag II rad GPP m S NwYk NY 1955 P \$3

This is a 162 pige prictical minual pripar difir the mutu I benefit of stude t d structor The autho has des gned exercises el tic eno gh to cope with the eeds of the exceptional as well is the verage tud nt For the n tructor h object ves lo cent rar nd two f c tor shifte ng the time required to prep re for balic experiments and daptablity fo either a c mprehensive or 1 s ; tensive course of t dy

Sugge ted eq pment nd materials f r expe iments re simple mexp n i e a d e sy to obtain Di g ams re numer us and cle r and blink pages fit student notes e con en ently placed througho t the book S If t st quest ons apper t the ed of e chu it Occ 10 ep t tious and v gue

Although indexes and bibliog aphy are not incl ded thi book will a ma u I for astructor and tud at doubtlessly serve adequately

New Books Received

Books received by the U.S. Armed Foces bledical Journal are acknowledged in this department. Those of great st interest will be selected for review in a later issu.

- STUDIES IN THE FUNCTIONS AND DESIGN OF HOSPITALS The Report of an Investigation sponsored by the Nulf eld Prov neval Hospitals T ust and the University of Bristol. 192 pages illustrated Ecofitey Cumbe lege Publishe to the University Oxford University P ess Amen Hous London E. C. 4 Distributed by Oxford University Press Inc. New York N Y 1955 Pr ce \$15
- OBSTETRICAL ROENTGENOLOGY by Robert Berman, M D F A C S Second Volume of a Series of Monographs on Obstettic & Gynecology edit d by Claude E. Heaton M D 599 pages 486 illustrations F A D vis Co Philadelphia Pa 1955 Price \$12 50
- SALIVARY GLAND TUMORS by Donald E. Ross M D F A C S F I C S F R C S (E g) F R C S (Edin) 86 pages illustrated Ch rles C Thomas Publi her Spr ngfield III 1955 Pr cc \$7 50
- THE QUANTITATIVE ANALYSIS OF DRUGS by D C Ga att Ph D (Lond)
 F R 1 C 2d edition 670 pages illustrated Philosophic 1 Library
 Inc. New York N Y 1955 P 1c \$17 50
- HOW TO MAKE SHAPES IN SPACE by Tons Hughes A recreational of it book with instruct one di grams and photographs for making the e-dim n si halg et ng cards posters garlands masks on ments toys and decoratio sof all k nd 217 p ges illustrated E P Dutton & Co. Inc. New York N Y 1955 Price 24 95
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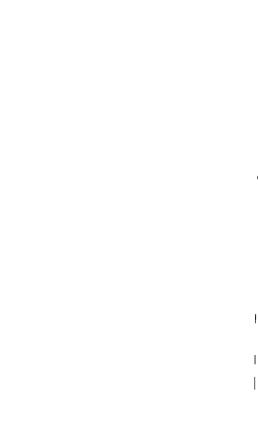
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	181	M h J m S J 1053
Hwd Jh M 237 Hudo Did C Hga Jph I Jr	1576	Moell Ens R 336 MIBH m B 539
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INSTRUCTIONS FOR AUTHORS

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REFERENCES

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CLINICOPATHOLOGIC CONFERENCE

UNITED STATES ARMED FORCES MEDICAL JOURNAL

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WASHINGTON 1955

Monthly Message

In 1214 the City of Bologna hired Dr Ugo of Lucca to perform surgery six months each year for the city and in case of war to treat the soldiers free Little is known about Ugo or where he obtained his education probably at the University of Salerno The requirements Ugo established for those striving to become good surgeons were recorded by his son Theodoric (1266) He advised them to

Frequent the pla where skilled surgeons operate to itend their operations diligently and ommit them to memory. There is no need f r them to be a ho d r ng b t let them be fore ighted gentle and circum pect in order that they may op rate with the greatest delib t reness and gentleness under II circumstance pecially arou d cerebr I in mbr nes s n ti e parts and other ticklish plice. All the things which as ence sary to the art cannot be included in bo k cannot ea ly be fres en and many of these frequirely hopen to the operator.

How true this is today

Frank B BERRY M D
Assistant Secretary of D fen e
(Health and Medical)

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FRANK B BERRY M D
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MAJOR GENERAL SILAS B HAYS
Surger G I U t d St t Army

REAR ADMIRAL BARTHOLONE W HOGAN
Surg Gen I U t d St t N vy

MAJOR GENERAL DANC OGLE

S & G nd U t d St t A F

United States Armed Forces Medical Journal

Volume VI

November 1955

Number 11

REACTIONS TO INFLUENZA VACCINE

JOHN R SEAL Commander (MC) USN

IN THE FALL of 1954 the Army, Navy, and Air Force an nounced a program for immunization of all military person nel against influenza The main objective of this program was to reduce morbidity and noneffectiveness in military units should either influenza A or B become epidemic during the winter The vaccine, at the recommendation of the Commission on In fluenza of the Armed Forces Epidemiological Board, contained equal parts (250 chick cell agglutinating units) of the FM1 and Conloy strains of influenza A viruses, and the Loe strain of influenza B virus Manufacture had followed the usual commercial methods, the viruses being grown in embryonated eggs, harvested, concentrated, suspended in aqueous solution, and inactivated with formalin

At the announcement of this program, concern was expressed by a number of medical officers about reactions to influenza vaccines A few wished to know if the incidence of reactions would not be such as to offset any possible efficacy of the vaccine in reducing noneffectiveness due to influenza Because of these questions, it seemed worth while to obtain some information on reactions that occurred during the influenza immunization program prior to its repetition

REACTIONS CAUSING NONEFFECTIVENESS AT TRAINING CENTERS

In early March 1955, just prior to termination of the immunization program for the season, the five havy and Marine Corps Training Conters were asked to provide the Bureau of Medicine and Surgery with information about reactions to influenza vaccine causing loss of time from dut. The majority of personnel immunized at these centers were new recruits, although the results given in table 1 are for all populations at these conters

At the Naval Training Center, San Diego, Calif, the 23 reactions were reported as being mild, and consisting of chills and fever following the inoculation At the Naval Training Cen

ter Bainbridge Md the two men sensitive to eggs who received the vaccine had urticaria One was admitted to the infirmary for 1 day The other also had an asthmatic attack and was hospital ized for 16 days. The remaining three reactions were diagnosed among Waves One had dizziness and shortness of breath with 1 day of illness a second headache and chills with 2 days of illness and the third syncope nauser and sore throat with

TABLE 1 R tons t /l nz vac us glos /tme/ m duty
tt g t d gw t / 1954 1955

s	N mbe	H p luz d for ns			
	oc la d	N mbe	P	(*)	1)(
NTC Gr Lak III	14 531	5	03	16	0
NTC Sa D g Calif	24 976	23	02	20	1 0
NTC B brds Md	28 019	3	02	4.8	2
MCRD SaDg Calf	9,230	4	04	18	0
MCRD P I land S C		1	49	10	0

4 days of illness In the report from the Marine Corps Recruit Depot Parris Island S C it was also noted that about 80 per cent of personnel receiving the vaccine had one or more of the following symptoms fever chills muscle ache tenderness at the site of inoculation or mild nausea but of insufficient se verity to cause admission to the sick list

OBSERVATIONS AT MARINE CORPS AIR STATION CHERRY POINT N C

A special report was received from the Marine Corps Air Station Cherry Point N C concerning reactions to influenza vac cipe In early January when the vaccine was first received 83

TABLE 2 1 dnc /p 1 oc 11

N mbe	P nt				
61	74				
61	73 60				
50	60				
47	57				
	50				
	30				
11	12				
7	8				
	61				

hospital corpsmen attached to the dispensary were inoculated. The incidence of postinoculation symptoms reported by the 83 men the following day are shown in table 2.

Some physicians asled if this vaccine all of which was of a single lot from one manufacturer (A), might not have been un usually toxic The Officer in Charge, Preventive Medicine Unit No 2 obtained vaccine made by another manufacturer (B) and assisted in a comparison of the two under conditions in which noither the examiner nor recipient knew which vaccine a man had received at the time he was interviewed for reactions Fifty four mon were selected for testing, screened for sensitivity to eggs, and examined Three men had fever and were not incollated Administration of the two products was alternated in the remaining 51 mon, with 26 ecciving that of manufacturer A, and 25 that of manufacturer B

None of the recipients sought treatment for reactions between the time of administration and 0800 hours the following morning, 21 hours later, when all 51 were again examined None had fever at this time and all were asymptomatic and fit for duty Twenty five of the 26 men recoiving vaccine from manufacturer A, and 17 of the 25 receiving vaccine from manufacturer B, reported having a sore arm following inoculation None of these had abnormal local findings or functional incapacitation Mild transient general malaise was reported by six ren, with no difference be tween the vaccines in this regard. It was concluded that local reactions, although frequent, were mild and that both vaccines were safe.

Following this study, immunization of the balance of personnel at Cherry Point was completed Another study was made in 123 enlisted personnel comparing different lots of vaccine from manu facturer A No difference in the incidence of symptoms was reported by mon receiving different lots

Two hundred officers were also questioned regarding symptoms after inoculation, and their replies are reflected in table 3

TABLE 3 Symptoms following t oc lattin

Symptom	Number	Percent
Swollen rm	100	50
Ge eral mala: e	83	42
[ever	61	31
Headache	53	27
Chills	40	20
\ we	21	īi
\ omitting	1 3	2
Deserba	1 .	

Of the 200 officers 13.5 percent reported time lost from duty varying from 15 minutes to 8 days although none were admitted to the hospital Several were temporarily withheld from flying as a result of reactions

In all 8 000 personnel were vaccinated against influenza at this station with 10 men diagnosed as having reactions to the vaccine admitted to the sick list Seven of these 10 were later shown to have been ill prior to being vaccinated

The medical officers report ended by stating that the rather high incidence of reactions among hospital corps on probably had some influence on the reported incidence of reactions in other groups. The runge had spread that the Medical Department was concerned and in consequence unpleasant afteroffects of vaccination were expected and probably searched for

DISCUSSION

From all indications the influenza virus vaccine administered to military personnel during the winter of 1954 1955 was responsible for a relatively high incidence of mild local symptoms and a lesser incidence of mild systemic symptoms but rarely caused a reaction of sufficient severity to necessitate hospitalization or less of time from duty. Such symptoms as did occur were transient and even the more severe reactions did not last more than "4 hours in nearly all instances Anaphylactic type reactions were not reported except in the two instances where the vaccine was administered to persons with pre-existing sensitivity to eggs.

The experience reported at the Marine Corps Air Station Cherry Point N C was similar to that observed by others who have interviewed personnel in the postinoculation period Only 9 percent of a group of 550 students at the University of Minne vaccinated with influenza vaccine during the winter of 1944 1945 stated that they had no reaction Local reactions were experienced by 91 percent and systemic reactions by 18 percent In a control group of 539 students moculated with normal saline solution containing formalin and a preservative in the same concentration used in the influenza vaccine 10 percent had local reactions and 0.7 percent systemic reactions. These reactions" consisted only of pain and local screness of the arm on the day of inoculation in most and only 4 students were sufficiently ill to require hospitalization for from 12 to 94 hours At the University of Michigan in the same winter 48 percent of students inoculated with influenza vaccine had systemic symptoms and 73 percent had local symptoms. A more recent ob servation on a larger group of adults was made in England during the winter of 1952 1953 A total of 6 340 including 1 303 person nel of the Army and Royal Air Force were vaccinated Local reactions classified as moderate and interfering with normal activity were reported in 2 6 percent of persons vaccinated, and general reactions of the same degree in 1 2 percent Local re actions classified as severe and causing absence from work were reported in 0 1 percent of persons vaccinated and general reactions of the same degree in 0 5 percent It was noted that large variations occurred among various groups of individuals, and that an equal of higher percentage of reactions occurred in persons given a control bacterial vaccine

Some of the immediate stinging and burning following inoculation is probably due to the formalin content of the vaccine and, as indicated in the experience of the University of Minne sota, some part of the local and systemic symptoms are probably not related to the virus content of the vaccine A majority of the systemic and local symptoms, however, have been shown to be related to the influenza virus content of the vaccine and are unavoidable unless ways are found to reduce the virus protein content without impairing the antigenic potency of the vaccine

Because the primary purpose of immunizing military personnel against influenza is to reduce noneffectiveness during influenza epidemics, when 10 to 20 percent or more of the personnel may have a febrile illness of several days' duration the comparative ly minor nature of local and systemic reactions reported during the winter of 1954 1955 would not seem to offer any obstacle to continued use of the vaccine

SUMMARY

Reports on the incidence of reactions to influenza virus vaccine used in military personnel during the winter of 1954 1955 were obtained from the three haval Training Centers and two Marine Corps Recruit Depots Reactions eventuating in admission to an infirmary or hospital occurred in less than 0.05 percent of personnel immunized Further studies were reported from a Marine Corps Air Station indicating that a high percentage of recipients of the vaccine had transient, mild, local, and systemic symptoms with relatively little incapacitation or loss of time from duti

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matography and color identification tests. The procedure is graphed to show the presence or absence of oppure alkaloids particularly morphine and codeine in urine. However modification of the procedure permits the analysis of other biologic specimens e g blood and tissue.

Heroin if taken will be detected as morphine due to the conversion of heroin to morphine by deacetylation during the metabolic processes and to the hydrolysis of any unmetabolized heroin in the specimen to morphine during the analysis. The hydrolytic process in the analytic procedure is necessary to free the alkaloid from the conjugate excreted in the urine so that the morphine may be exhausted and identified.

DIMETHYLAMINODITHIENYLBUTENE

3 Dimethylamino-1 1 di(2-thienyl)-1 butene is a synthetic chem ical pos essing addiction-forming and addiction sustaining proper ties similar to morphine. As might be expected by its structure this chemical possesses antihistaminic activity and as would not normally be expected from its structure also possesses analgesic effects similar to morphine. It is available in Japan under various trade names e g ohton asmaret shikiton reston monospan hopiton baldon tei and barudon T. These products have been placed under the narcotic control acts in Japan and are controlled by the Japanese government in the same manner as morphine or codeine. In the United States a Presidential Proclamation has placed dimethylaminodithienylbutene within the scope of the narcotic drug acts of the United States.

As in the United States legitimate products in Japan are sometimes diverted to illegal channels and instances occur in which personnel subject to military law illicitly use this drug instead of or in addition to heroin and the other available drugs. Dimethyl arminodithenylbutene is distributed in an injectable dosage form in amber glass ampules to which are affixed the manufacturers label. The solution in the vial may be pink in hie or if old may have some dark turbidity due to decomposition of the chemical which is unstable in heat or light. As this product is always taken by injection users will have needle marks and will frequently exhibit symptoms associated with heroin or morphine intoxication. The users are sometimes found in a comatose state Urine excreted by a person taking this drug may be dark green or purple-black in color.

At this laboratory in 1954 a method was devised for the detection of the chemical in the urine of those taking this drug. The urine is subjected to a process of extractions without prior hydrol jais followed by paper chromatography of the extract and finally color identification tests which give characteristic reactions

MEPERIDINE HYDROCHLORIDE

Meperidine hydrochloride, commonly known in the United States under its trade name of demerol is found in Japan among United States military personnel primarily as as item obtained from military medical supply channels Instances in which it is illegally used are confined primarily to members of the medical services of the armed services Meperidine hydrochloride as obtained from medical supply is easily identifiable by its label on either the multiple dose vial or the single dose ampule Manufactured in Korea under the names neo berinal and neo-dolantin, it has been found in the possession of military personnel stationed there

The dosage form of meperidine hydrochloride available is the injectable type and, therefore, a user should bear needle marks. The clinical symptoms associated with use of this drug are similar to those of heroin or morphine.

An examination of the chromatograph prepared for an opium alkaloid analysis of a urine specimen will indicate the presence of meperidine hydrochloride at the appropriate R_f or position on the paper. The drug is stable to acid hydrolysis and is extracted from urine at the same time morphine or codeline is extracted. After paper chromatography, color and microcrystalline precipitation tosts are used for final identification.

MARIHUANA

As one of the several varieties of Cannabis, marihuana is found in Korea primarily because of its occurrence as a domestic crop for the production of hemp Small quantities of marihuana have been found in Japan and presumably have been smuggled in by personnel coming from Lorea or from the United States Marihuana is smoked usually as a cigarette or "reefer," or sometimes in a pipe The cigarettes are hand rolled and crimped Hashish the resin obtained from the Cannabis plant in the Middle East has not been found in possession of military personnel within the Far East Command

Marihuana leaves are always smoked and may produce aggres sive tendencies and stimulation of the senses in such a manner that external stimuli are magnified and distorted. A marihuana smoker may have discernible characteristic black stains on the thumb and index finger tip analogous to the yellow brown mechane stains on the fingers of tobacco users. A method is available for the detection of marihuana users based on chemical reactions to petroloum ether washings of the finger stains * 10 A procedure to detect marihuana users by analysis of urine specimens is under investigation. This procedure is based on an extraction of the urine by an appropriate solvent and color tests applied to the extractive 10.

METHAMPHETAMINE HYDROCHLORIDE

Methamphetamine hydrochloride a sympathomimetic amine is used extensively by the Japanese 2 and by a few military per sonnel in Japan. It was previously manufactured legally in Japan under the trade names philopon hilopon hiropon helopon hosnitan methyl propamin neoagotin takarapitan and fukuzedrin These names have been applied by common usage to all methamphetamine hydrochloride injectables that are now available on the illegal drug market in Japan This drug is generally administered by injection It is distributed as a 1 percent aqueous solution in 2 to 3 ml clear glass ampules without a label when manufactured illegally and is sold at prices ranging from 20 to 50 yen (5 to 15 cents) The chemical itself is clandestinely prepared by chemists with laboratory facilities and supplied to the packagers or vendors who prepare the solution and place it in vials under such conditions that their products are unsterile and unsafe for use. In Japan methamphetamine hydrochloride is usually synthesized from either natural or synthetic ephedrine

The Japanese government has passed laws and regulations prohibiting the sale and use of this drub and has placed enforcement of these laws under the narcotics section of the Ministry of Health and Welfare

It is reported that on withdrawal of the drub. Japanese philopon addicts have in numerous cases suffered symptoms similar to morphine withdrawal symptoms. These symptoms have varied in duration from 1 to 30 days and in a few cases up to 3 months however, others have had no withdrawal symptoms.

A philopon or methamphetamine user will bear venipuncture marks on the extremities. While under the influence of the drug a user may have dilated pupils and may or may not be violent or agressive and suffer from hallucinations or psychoses it has been reported by Japanese medical and health authorities that users of philopon will eventually develop serious psychoses exceptified in the first stages by Isllucinations induced by external stimuli and later by hallucinations without any stimuli whatsover.

An analytic procedure for the detection of this drug' was devel oped in 1954 at this laboratory which could be used routinely on a large number of urine pecimens in conjunction with the analysis for opium alkaloids and using the same urine specimen. Meth amphetamine hydrochloride is absorbed onto activated charcoal during the cour e of the opium alkaloid analysis and subsequently is eluted chromatographed and subjected to color identification tests for methamphetamine

BARBITURATES

Several different barbiturates have been detected in specimens obtained from military personnel or dependents, and barbiturates in their dosage forms have been found in possession of United States personnel or at the scene of suicides Barbiturates are from two sources, the military medical supplies and the Japanese market. Most of the barbiturates available in the United States are also manufactured in Japan and are available on the Japanese market However many of the barbiturates extensively used by the Japanese are not commonly prescribed in the United States The harbiturates used in military medical facilities are of course. those which are most commonly used in the United States Military medical supply has available such common barbiturates as phenobarbital secobarbital amobarbital pentobarbital et cetera, while on the Japanese market the most common barbiturates found are ethylcyclohexenyl barbiturate, dimethylcyclohexenyl barbiturate, nhenobarbital, and pentobarbital

Barbiturates are prepared in tablet, capsule, and powder form for oral use and in equal solution for intravenous injection. The barbiturate dimethylcyclohevenyl, known as cyclopan or chickapon, has been reported in the Japanese press and law enforcement agencies as being used extensively by drug addicts in place of heroin or philopon. Military personnel have been found to be using this drug either alone or in conjunction with other drugs obtained from the illegal drug market. The other barbiturates, such as amobarbital, secobarbital, phonobarbital, pontobarbital, and ethyl cyclohexenyl barbiturate, have also been detected in specimens obtained from personnel in or with the armed services.

Barbiturates are extracted from the specimens at appropriate pli and a spectrophotometric examination is made" to give conclusive identification, a series of color reactions are used." A system of extraction has been devised whereby a specimen can be analyzed qualitatively for barbiturates concurrently with an analysis for opium alkaloids methamphetamine hydrochloride, and dimethyl aminodithienylbutene It has been found that by using the combination of spectrophotometric data and color reactions a positive identification is possible for barbiturates, which have heretofore been unidentifiable by either spectrophotometric or color reaction methods as applied to the toxicologic specimens received

UREIDES

Ureides are commonly used by the Japanese as sedatives, either alone or in conjunction with some of the milder barbiturates. Among the ureides are those commonly known in the United States as carbromal and bromural (bromodieth) lacetylurea and a (bromodieth) acetylurea acetylu

isovaleryl-purea respectively) Two additional ureides are also commonly used in Japan these are acetylbromodiethylacetylurea and bromodiethylpropanylurea. The barbiturate perhaps most frequently associated with the ureides is pentobarbital. The ureides or ureide-barbiturate combinations occur most frequently in Japan as tablets or powders for oral administration. There have been several instances in which sucides have been attempted through an overdose of these products.

Ureides taken orally act as a depressant and cause drowsiness An overdose will produce coma accompanied by constriction of the pupils Most suicide attempts with ureides have been unsuccessful apparently because of insufficient dosages

In numerous instances stomach contents blood or urine are submitted for toxicologic examination for identification of an in gested drug. A system of analysis has been devised to be applied to these specimens for the identification of wreides either alone or in combination with barbiturates following the method presented in the literature for analysis of the dosage forms. The sententification tests have been applied to the extractives based on the data given for ureides in The Vational Formulary and New and Nonofficial Reredies as they are applied to pharma ceutical dosage forms. The process of analysis consists essentially of extractions each at appropriate pill followed by tests for chemical and physical properties

PENALTIES FOR USE

Military personnel in the Far East Command who unlawfully use heroin meperidine hydrochlonde directlylaminodithenylbutene methamphetamine hydrochloride or barbiturates may be tried by court-martial under The Uniform Code of Military Justice The use or possession of heroin is tried under Article 124 as a violation of a Federal statute while use or possession of the other drugs is trued under Article 92 as a violation of a lawful general order although in most cases it could be tried under Article 134 which is the more serious charge

LITTLIZATION OF ANALYSES

Results of the various analyses for unlawful drugs are used primarily by the 'tmy Air Force and havy law enforcement agencies to prove definitely that a person has used drugs when he has been found in possession of them or has indicated in some other way that he is a user. Of course in numerous cases negative reports on persons may serve to exonerate them at least for a time

In the event of a positive finding of one or more drugs the result is incorporated into the case report which is forwarded through channels by the investigative agency to the individual s unit. The unit then initiates such action as it deems appropriate fol lowing the recommendations of the investigating officer. The usu al action is trial by a court-martial, and on conviction a period of confinement and/or separation from the service.

In many cases during the course of a general court-martial the toxicologist or chemist must prepare a deposition or appear in the court as an expert witness. In recent months the United States Court of Military Appeals has recognized evidence, obtained by the methods used by this laboratory for the detection of opium alkaloids, as being valid and conclusive The most frequent objection to this evidence is the chain of custody of the specimen from time of collection until the final analysis. To overcome this objection elaborate paper work and administrative procedures are required.

Findings of unlawful drugs in the autopsy specimens of a person can lead to a determination of "Misconduct" and "Line of duty, no which results in loss of the 6-months' gratuity pay to survivors Of importance to the pathologist performing the autopsy is the assistance these tests provide in determining the cause of death

NARCOTICS STATISTICS

From January through December 1954 about 4,000 specimens, excluding autopsies, were analyzed for the presence of opium alkaloids From this series of specimens it was found that 441 persons had taken opium alkaloids, as represented by positive reports on 559 specimens During the year 1953 about 3,000 specimens were analyzed for opium alkaloids, of which 705 contained the narcotics in numerous cases it has been observed that several specimens taken from the same person at different times and from different localities have been positive for opium alkaloids or other drugs

A survey in the Yokohama area, of military subjects who were narcotics users disclosed that of 164 subjects 76 percent were vertices users disclosed that of 164 subjects 76 percent were caused and the remainder Caucasian. The average level of education was 10 years of schooling, and the average age was 23 years. In almost every instance the subject's first introduction to drugs was by a prostitute, but sources thereafter included other pushers. This does not necessarily reflect command wide findings a tri service survey of the Far East Command established that 20 percent of military users were introduced to the drug by prostitutes, 39 percent by service friends, 21 percent by civilian friends, and 20 percent by peddlers.

Four percent of the subjects voluntarily turned themselves in as users in order to obtain help or cure, while the remaining 96 per cent were detected by the Military Police About 38 percent were arrested by the Military Police for such violations as AMOL.

disordedly conduct, or drunkenness and subsequent search or questioning disclosed use of drugs. The remaining 58 percent were arrested as a direct result of Whitary Police criminal investigators efforts. No detailed study has been made on the users of central nervous system stimulants or barbiturates.

Interesting and informative data have been published by the Japanese Ministry of Health and Welfare concerning the use of philopon in Japan. A report published for September 1954 1 indicated that in that month there were over 103 000 former users reported and over 2 000 current users The majority of the users were men between 0 and 22 years of age. These persons used from 1 to over 100 vials of philopon per day It is interesting to note that the three main reasons given by these persons for starting to use the drug were their own curiosity the urgings of friends and the drug s purported approdistac properties. It is also interesting to note that many of those who stooped using it are stated to have stopped voluntarily In a report by the Tokyo Metro politan Police on philoson users it is revealed that of 1 747 uvenile users 426 have been involved in such crimes as larceny violent assault robbery rape and murder while presupably under the influence of this drug Numerous philopon addicts are in Jananese mental institutions for psychiatric therapy or as crimi naily meane

DEATHS

From January 1951 through December 1954 a total of 50 deaths in the Far East Command due to opium alkaloid poisoning as i definitely shown by toxicologic and pathologic examinations at autopsy were reported through this laboratory. The distribution of these deaths by vear and by branch of service is shown in table 1

TABLE 1 Aut py find g p 1 e for p m lkal ds (from lanuary 1951 through D mb 1954)

Banh		Α 0	T 1			
of t v	1951	1952	1953	1954	N mb	P
Army	7	9	11	8	35	70
Ar Forc	1	2	3	1	7	14
N vy	0	0	0	1	1	2
Vicha Marne	1	0	2	2	5	10
DAC	1	0	0	1] 2	4
T tal	10	11	16	13	50	100

The ages of the deceased ranged from 19 to 40 years with an apparent peak in the early 20 s, probably related to the predominance of this age group in the armed services Seventy six percent of the deceased were Negro and the remainder Caucasian In 75 percent of the cases in which the person was dead on discovery, the bodies of the victims were recovered from houses of prostitution The remaining 20 percent of the victims were found in hotels, latrines, alleys, and parks In spite of the fact that addiction to morphine frequently leads to loss of libido, 45 percent of the victims were involved in some type of sexual act immediately prior to or at the time of administration of the drug

On toxicologic examination, significant concentrations of ethyl alcohol are frequently discovered in conjunction with morphine The concentrations of ethanol usually found in these cases were suggestive of some degree of intoxication prior to or at the time of narcotic administration, however usually it was not enough to produce acute alcohol poisoning as such In these cases ethanol taken concurrently with morphine, heroin or codeine probably produced a synergistic effect on the central nervous system and perhaps accelerated and deepened the depressant action of the alkaloid In connection with this observation it should be men tioned that recently there have been several instances, described in Denmark of death occurring a few hours after morphine injection into persons with alcohol concentrations far below the accepted lethal doses for alcohol 1 In these cases, morphine in the usual dose of 20 mg had been administered to aggressive and excitable alcoholics as a sedative, but its use resulted in the patients' deaths

The essential criterion for establishing the diagnosis of acute opium alkaloid poisoning is isolation of one of the alkaloids from body fluids or tissues because the autopsy findings on gross or histopathologic examination are not specific for any of these alkaloids Indicative gross and histopathologic changes are noted in table 2 and are frequently found in persons who have died of acute opium alkaloid poisoning. At autopsy the general appearance is that found in asphyxial death

It is not unreasonable to suspect virus hepatitis as a complication due to disregard for sterile technic at time of injection of the drugs. On autops), some persons were found to have jaundice and hopatitis which in some instances may have been a complicating factor in their deaths. Septicemia also may occur in some cases as a result of contaminated injections.

It should be kept in mind that if the addict remained in coma for a lone, period of time an attempt usually was made, by local physicians or occupants of the house where he lay to revive him with analeptic drugs stimulants, or other undisclosed treatment

g dhipthlgchag pum lkldd th TABLE 2 Induc tov g

Chg foud t tpsy	P ce f P
P Imonary d ma	78
Plm ary g t	62
Cebl get	25
Portal h pat lymphad	25
P p rt l h pat flt t	19
Ppl tret	22
V p tur arg f trm t	62
Uppe t mu	43
Lw trmt	19
Thr mbophibt d bl ra f	9
S beut neou d'nt mus ula n- j ca	13

There is always the possibility that at this time a hepatotoxic agent may have been given or that some other agent may have been administered which complicated the picture

Recently N allyinormorphine has been added to the items of medical supply for use as an antidote in opium alkaloid poisoning The use of this drug on persons in the latter stages of asphyxia has resulted in complete and dramatic recovery within a very short period of time

SIMMARY

Illegally used drugs found in the Far East Command are primarily heroin marihuana meperidine hydrochloride dimethylamino dithienylbutene methamphetamine hydrochloride and barbiturates These products are inexpensive and readily available. The per sistently directed efforts of the investigative and law enforcement agencies of the armed services using sensitive methods of detecting drugs in the urine of the users may act as an effective deterrent to experimentation by susceptible persons

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Research has been called good business a necessity a garble a game it is none of these-it s a state of mind -Martin T Fischer

TABLE 2 Indicativ g s db st p tb l g chang p um alk l dd tb

Chg foudtatpsy	P t of P
P Imonary d ma	78
Plm rygt	62
Ceblge	25
Portal h pa lymphad st	25
Pprilhpat fira	19
Ppl trt	22
V p tur sr g f trm	62
Uppe t m ta	43
Low trmt	19
The mbophibe d bi f	9
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SUMMARY

Illegally used drugs found in the Far East Command are prime heroin marihuana meperidine hydrochloride dimethylamino dithenylbutene methamphetamine hydrochloride and barbiturates. These products are inexpensive and readily available. The per sistently directed efforts of the investigative and law enforcement agencies of the armed services using sensitive methods of detecting drugs in the urne of the users may act as an effective deterrent to experimentation by susceptible persons.

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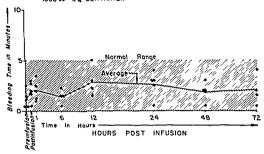
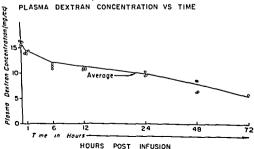


Figure 1 In no instituce does the bleeding time exceed the upper limits of no mal (5 min.)

In only one patient was a hypertensive effect noted. This moderate blood pressure rise was impossible to evaluate for it occurred in a patient with mild essential hypertension. No other untoward reactions were noted.

Serial studies of plasma dextran concentration are shown in figure? At the end of the 72 hour period the plasma dextran level was about one third its postinfusion level



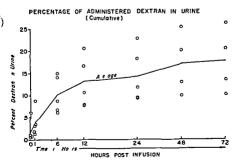
ligure... The average plu ma dextra concentration at the end of al bo is is 98 mg/cc

Expansion of the plasma volume is indicated by the depression in the hematocrit and in the plasma protein concentration (table 1). The two results are not identical but reflect the changes in plasma volume.

TABLE 1								
	Ьn	7 6	cr t	nd pi	m	₽	ſ	ns:

Hur foe unf n	H matoer t d p ns (p e t)	Pla ma prote d p (p t)		
0	15	18		
6	14	20 22		
12	14	19		
24	10	12		
48 72	10	14		

The percentage of administered dextran which was excreted by the kidney is shown in figure 3. There was a moderate varia tion among patients in the rate of excretion the average being 17.8 percent at 7° hours. The relatively rapid excretion in the early hours after infusion presumably reflects the rapid passage of the smaller molecules across the renal barrier.



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mbe 1955)

DISCUSSION

The lack of abnormal bleeding in this study is interesting in that previous authors have found that not infrequently there is a marked hemostatic defect produced by other dextran preparations, which these authors have attributed to plasma retention of the large molecules,2 or to the degree of retention or metabolism of dextran in the tissues 3

The length of effective circulatory support is reflected by the sustained plasma dextran concentration and the duration of the depression of the hematocrit and the plasma protein concentration An estimate of the original plasma volume (45 cc/kg of body weight) corrected serially by the depressions in hematocrit and plasma proteins, in conjunction with the plasma dextran level, gives a rough means of extimating the percentage of the dextran which has been retained in the plasma. This calculation is shown in figure 4 It will be noted that an average of 34 5 percent (cal culated) of the total administered dextran is still circulating at

PERCENT OF ADMINISTERED DEXTRAN RETAINED IN PLASMA

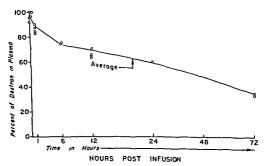
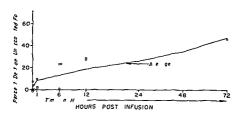


Figure 4 This calculation demonstrates the slow removal of the dextran from the cuculatory system.

the end of 72 hours. The percent of the administered dextran unaccounted for in plasma and urine is shown in figure 5. This percentage is metabolized,' stored or lost through other excre tory pathways ! It is of importance to note that this percentage includes nearly one half of the administered dextran at the end of 72 hours and that a relatively small part is excreted via the urinary tract.

PERCENT OF ADMINISTERED DEXTRAN UNACCOUNTED FOR IN URINE AND PLASMA



Figur 5 A large f tion f the d xtr met bol d or for d

CONCLUSIONS

This high molecular weight dextran preparation caused in this study no untoward bleeding or other deleterious manifestation. The dextran supported the circulation for a prolonged period of time about one third of the dextran being retained in the plasma at the end of 72 hours.

A relatively small although si_nificant amount of the dextran y was excreted via the urinary tract averagin, 17 8 percent (cumu lative) at the end of 7° hours. The largest percentage of this dettran was metabolized stored or lost through excretory path ways other than the urinary tract.

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PSYCHOSOMATIC DIAGNOSIS

CHARLES S MULLIN IT Commande (MC) USN

P SYCHOSOMATIC conditions are among the commonest of the illnesses encountered by the service physician let it is my opinion that considerably more time energy, and anxiety are expended by the average medical officer in a search for organic factors to explain the symptoms arising from an emotional disturbance than is necessary to arrive safely and soundly at the correct diagnosis. No rational physician, regardless of specialty, would hold that a careful effort to exclude organic disease is not necessary. The point is that this effort is unnecessarily prolonged and inefficient.

It is indeed a tragedy to mistake the symptoms of gastric carci noma for neurotic dyspepsia but noither is it of benefit to subject a nostalgic recruit to a laparotomy when his abdominal pain and yomiting are expressive of a yearning for home and mother rather than indicative of some primary intra abdominal disease

This article is an attempt to describe a more efficient and positive approach to the diagnosis of psychosomatic conditions. Per haps the commonest reason for the missed or delayed diagnosis is that the possibility of emotional determination simply is not seriously entertained but when the physician considers that the symptoms at hand may be of emotional origin it is of value to elicit evidence of basic pathologic anxiety. It is true that some patients with predominating historical symptoms may inanifest little or no anxiety—at least as long as the hysterical symptoms continue in force—but these are relatively few. The average patient with functional symptoms will show evidence of basic anxiety even though the neither admits "norvousness" nor feels it.

OBILICATIVE EVIDENCES OF ANXIETY

Signs of undue tension should be looled for (due consideration being given of course to the possibility that some degree of autonomic overaction may be the result of the examination situation itself or other extraneous influences). The tense "nervous" man ner the rapid beating of the carotid pulse paling and flushing dilated pupils tremor of the hands hyperhidrosis cold moist hands various abertations of breathing (for example sighing rapid shallow or irre ular re piration) and aerophagy are useful findings.

in this connection. The pounding quality of the heartbeat on auscultation without much increase in rate may be significant. One of the more useful indications is palmar sweating Cold sweating palms especially in the absence of much sweating elsewhere is a pretty sure indication of anxiousness and is often found in pa tients who do not choose to acknowledge nervousness because of a reluctance to have symptoms degraded as mental in prising or in patients who do not feel any anxiety Sweating of this kind is of particular diagnostic value if the patient realizes that the condition has been present since the beginning of his preoccupying complaints

SUBJECTIVE MANIFESTATIONS

In addition to these objective physiologic evidences of anxiety it is important to inquire about the presence of certain subjective manifestations one or more of which are invariably present in psychosomatic disorders These include undue consciousness of heart action ready breathlessness increased frequency of mictu rition easy fatigability, pressure head sensations postural dizzi ness impaired concentration shakiness on exertion restless sleep impaired appetite morning nausea or vague gastric distress Any of these symptoms may be a reflection of an organic disease but in psychosomatic diagnosis if none of these corollary manifes tations are present in addition to the main complaint some doubt justifiably may be cast on the assumption of psychogenesis These symptoms are especially valuable if they have been noticed only since the patient's presenting symptoms have troubled him. The point is that such symptoms often are not mentioned by the patient asked about by the physician or given due consideration if elicited

It is of some importance to inquire into the past history for evidence of neurotic predisposition. This predisposition may be discerned in the sphere of behavior or of symptomatology Inquiry can be made into the patient's familial social sexual occupational and marital adjustments because the majority of neurotic patients (with the possible exception of some conditions precipitated by severe battle or other traumatic experiences) will show clear evidences of some failure of adjustment in one or more of these areas

Inquiry should also be made as to the existence of so-called neurotic traits for example frequent nightmares sleepwalking excessive nail biting prolonged thumb sucking enuresis et cetera Of somewhat more significance in the background is the existence of suggestive psychosomatic symptoms in the past It is well to look for a past history of frequent headaches (often of the sick variety) capticious appetite frequent gastric distress frequent dizzy spells and fainting attacks, undue consciousness of heart action tendency to breathlessness, lack of physical stamina out of proportion to physical build ready fatigability, susceptibility to frequent colds, tendencies to backache and vague rheumatic pains, menstrual difficulties in women, et cetera Whenever possible it is useful to evaluate these manifestations in the light of the patient's life situation at the time of their occurrence

Some consideration should be given to the family history Except in so-called traumatic neuroses it is rare indeed to encounter a neurotic patient whose life history does not reveal evidence of some disturbance of his childhood relationships with his parents Rejective overprotective, seductive repressive, dominating, overindulgent parental types in various combinations are in variably encountered in the history of psychosomatic as well as in all other neurotic conditions. In addition the frequency with which symptoms resembling the patient's principal complaint are also found present in one or more members of the family is striking. This is especially true in the case of headaches, "rheumatic" manifestations and gastrointestinal disorders (In a study of 50 unselected cases of British soldiers suffering from neurotic dyspepsia (gastrointestinal series negative). I found a history of chronic gastric disturbance in at least one member of the immediate family in over 10 percent of the cases.)

The careful consideration of the special features of the presenting symptomatology itself is most helpful in arriving at the correct diagnosis. The presenting complaints most commonly encountered at least in military practice fall into the following groups (1) headache (2) gastrointestinal (3) cardiorespiratory and (4) neuromuscular (*rheumatic)

HEADACHE

The vast majority of headaches seen at sick call are psychologically determined although often the medical officers first thought is to order roentgenograms of the sinuses and an ocular refraction. There are probably three principal mediating mechanisms producing this kind of headache acting singly or in combination, riz (1) kasomotor changes involving intra and extra cranial arteries (2) mild continuous spasm of the scalp and neck muscles and (3) a "mental image of pain—the emotional elaboration of sensations of local tension or discomfort into a severe "painful experience"

Of these three rechanses the last two acting together probably underlie most neurotic headaches. This scalp ruscle tension mental image" type of headache has certain typical features While it may involve any or all parts of the head there is usually an emphasis on the back of the head and neck. The pain

is typically dull steady although sometimes the dynamic pulsa tion of scalp blood vessels through the tense musculature creates a rhythmic throbbing quality to the headache. It is usually associated with a feeling of tightness or pressure. The muscles of the back of the neck often feel stiff There is some increase of pain on anteroflexion of the neck and tenderness of the muscles of the posterocervical regior and often of the trapezius area. The pain and pressure sensations are markedly aggravated by noise unpleasurable excitement (pleasurable excitement usually has an opposite effect) heat and exertion Usually the patient thinks that the headache "causes his nervousness and irritability rather than the reverse But often he does recognize that anger frustra tion and anxiety may precipitate or creatly a gravate his symp toms and this relationship should always be investigated A sig nificant pointer when elicited in the tension type of headache is the effect of wearing headgear. Many patients are quite intoler ant of any pressure. In an examerated instance a patient of mine was constantly being reprimanded because he could not bear the weight of his light sailor cap and insisted on walkin, about the compound holding it in his land Finally this variety of neurotic feadache is invariably relieved temporarily by procaine injections

GASTROINTFSTINAL

Complaints referable to the upper pastrointestinal tract especially to the stomach are very common and incidentally are found more often on the medical rather than on the neuronsychiatric wards Lower bowel involvement is relatively less frequent. There are some typical features of the symptomatic picture of a pay cholo_ically determined nonulcorative gastric disorder as seen in service personnel and this will be described. It must be emphasized however that while neurotic disturbances may mimic almost any organic disease of the abdominal cavity on the other hand certain or anic diseases can live rise to a picture resembling the symptomatic pattern to be described Therefore too heavy reliance should not be placed on this one feature of the entire picture and any patient over 35 who complains of chronic dyspeptic symptoms should have a thorough radiologic survey However conjunction with other elements of the total picture a considera tion of the descriptive aspect of the presenting complaint is of much value The pain is diffuse and varuely described It comes on within an hour after meals Food and ravates rather than allevi ates this pain and the effect of alkalies is quite variable. There are inconsistencies in the type of food indicated as especially irritant Usually heavy fried or greasy foods are avoided but often preconceived notions are determinant and one patient wlo can die t milk i unable to take egs apples but not oranges bacon but not fried ham broccoli but not spinach et cetera A fair to good appetite prior to sitting down to the meal followed by a loss of appetite or even revulsion at the sight of food or after a few mouthfuls is characteristic "The food seems to stick on the way down" "lays heavily on the stomach" and "it does not seem to digest properly" Quivery, tremulous and "nervous" feelings in the stomach are often described A recognition of the relationship between emotional tension and an aggravation of symptoms is frequently present Morning nausea is often common Yomiting is also common—usually within an hour after taking food—and often relieves the distress immediately

A word might be said at this point about the effects of aerophagy. The commonest cause of aerophagy is anxiety but the symptomatic consequences of an abnormal collection of air in the esophagus, stomach and upper bowel, particularly where this air pushes up against the diaphram and disturbs the anatomic physiologic relationships within the thorax may be quite misleading and quite suggestive of such conditions as peptic ulcer, malistones, heart disease including angina pectoris intercostal neural, in et cetera Incidentally aerophagy can cause pain in the left side of the chest which may even radiate to the left shoulder.

CARDIORESPIRATORY

The complaints usually presented are chest pains palpitations. and breathlessness alone or in combination Where no organic basis can be discovered for these symptoms it has been nonitar to label the condition effort syndrome neurocirculatory asthenia disordered action of the heart (DAH) et cetera Inherent in these terms is the notion of some constitutional or acquired abnormality of the cardiovascular system Although there may be a small number of patients presenting such symptoms who have a small sized heart and great vessels in whom there is little evidence of anxiety and whose symptoms might bear a relationship to a constitutionally inadequate cardiovascular system, it is probable that the vast majority of patients with effort syndrome or neurocirculatory asthenia are neurotic expressin, their neuroses through this particular body "system The vast majority of pa tients with emotionally determined cardiorespiratory symptoms have normal sized hearts vessels and capillary structure

The pain in the left side of the chest of a cardiac neurotic patient is usually "achey in character with occasional sharp twinges It is invariably apical in location I have never seen pain described as substernal and crushin, and rarely is it referred to the basal region left shoulder or down the arm although such radiation can occur. The shortness of breath of which the patient complains is not true dyspined. There is usually some sensation of oppression through the chest a feeling of inability to get a satisfying breath often associated with frequent and sighin.

is typically dull steady although sometimes the dynamic pulsa tion of scalp blood vessels through the tense musculature creates a rhythmic throbbing quality to the headache. It is usually associated with a feelin, of tightness or pressure The muscles of the back of the neck often feel stiff There is some increase of pain on anteroflexion of the neck and tenderness of the muscles of the posterocervical region and often of the trapezius area. The pain and pressure sensations are markedly appravated by noise unpleasurable excitement (pleasurable excitement usually has an opposite effect) heat and exertion Usually the patient thinks that tile headache causes" his nervousness and irritability rather than the reverse But often he does recognize that anger frustra tion and anxiety may precipitate or greatly aggravate his symp toms and this relationship should always be investigated A sig nificant pointer when elicited in the tension type of headache is the effect of wearing head_ear. Many patients are quite intoler ant of any pressure. In an exag erated instance a patient of mine was constantly being reprimanded because he could not bear the weight of his light sailor can and insi ted on walking about the compound holding it in his land Finally this variety of neurotic feadache is invariably relieved temporarily by procaine injections

GASTROINTESTINAL

Complaints referable to the upper gastrointestinal tract especially to the stomach are very common and incidentally are found more often on the medical rather than on the neuropsychiatric wards Lower bowel involvement is relatively less frequent There are some typical features of the symptomatic picture of a psy cholo_ically determined nonulcorative gastric disorder as seen in service personnel and this will be described. It must be emphasized however that while neurotic disturbances may mimic almost any orkanic disease of the abdominal cavity on the other hand certain organic diseases can give rise to a picture resembling the symptomatic pattern to be described. Therefore, too heavy reliance should not be placed on this one feature of the entire picture and any patient over 35 who complains of chronic dyspeptic symptoms should have a thorough radiologic survey However conjunction with other elements of the total picture a considera tion of the de criptive aspect of the presenting complaint is of much value. The pain is diffuse and va_uely described. It comes on within an hour after meals. Food agaravates rather than allevi ates this pain and the effect of alkalies is quite variable. There are inconsistencies in the type of food indicated as especially irritant Lsually heavy fried or greasy foods are avoided but often preconcery d notions are determinant and one patient wlo mili i unable to take eg, apples but not oranges bacon but not fried ham broccoli but not spinach et cetera A fair to good appetite prior to sitting down to the meal followed by a in my diagnosis unless I am able to discern some evidence of plausible psychodynamics. Most psychogonic conditions are the result of a variety of subtly interacting factors but in most in stances the principal precipitating factors and dynamic themes can be discovered if one knows what to look for In very general terms it may be said that any persisting threat to security of self esteem, or chronic lack of emotional satisfaction crucial to the person, may give rise to anxiety and depression, and their diverse symptomatic and attitudinal elaborations. Such threats or lack of emotional satisfaction may be inherent in a number of situational patterns. The following are some of those most frequently occurring in the military practice.

The usual and quite obvious domestic, financial, marital, and disciplinary troubles (Oddly enough, the patient frequently fails to mention important and obvious wortnes because he does not think they are relevant Hence, the possibility of immediate conscious problems must always be considered)

Separation from a milieu of home family and civilian life in which the patient felt secure (Including the familiar nostalgia of the immature recruit)

General thwarting of emotional satisfaction, inherent in a military setup in a person with strong "dependency needs". This type of conflict may be an important part of the emotional distress of the factor mentioned above but very often exists independently of the mere fact of separation from civilian securities and support. This is a very common type of conflict and is often more or less subtly disguised, perhaps as an overcompensatory aggressiveness or an air of independence

Anxiety related to the arousal of hitherto dormant but potentially powerful hostile impulses as a result of a temperamental clash with certain aspects of the military organization perhaps the restriction and regimentation of the life and the presumed arbitrary discipline or interpersonal difficulties with specific authoritarian figures

Homosexual conflicts, conscious or otherwise, brought about by a life of close communal association with other men as well as anxiety related to other sexual abnormalities

Increased pressure of work and responsibility--often following promotion-in a basically insecure person

Traumatic events A head injury or any abrupt, shocking experience may account for the initiation of a neurotic disturbance. The influence of old combat experiences, even though they occurred many years before must not be overlooked in this connection

A final word of caution while direct and even loading questions are necessary to save time one should endeavor to minimize the possibility of suggesting symptoms and answers one should be sympathetic and respectful of the prtient or person and avoid a third degree approach which could inhibit frank and objective responses

SUMMARY

The identification of so-called psychosomatic conditions can be creatly expedited with benefit to the patient and physician by placing emphasis on the positive systematic approach to the diagnosis rather than on the customary negative ruling out process

This is accomplished by bein, alert to the nossibility of psycho benicity by lookin, for evidence of anxiety by considering the quality of the previous personality and the family history by studyin, the specific features of the presenting symptomatology and finally by secking diligently (but not overstraining)) for plausible psychodynamics

REFERENCE

IM bil SD dMill CSN ur dy pep ld IM nr S 90-869-840 1944

EFFECTS OF DRUGS IN VOLUNTEER SUBJECTS

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-LOUIS LASAGNA and JOHN N FELSINGER

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RADIOGRAPHIC STUDIES IN VARICOCELE

IAMES W LANE Capta n MC USAR

THE left-sided idiopathic varicocele is a troublesome problem frequently seen by the military surgeon Pain is the prominent symptom and sometimes is severe enough to limit the activities of otherwise healthy men Atrophy of the testis will occur in a few of the patients with a large varicocele

In the past opinions regarding the proper management of this problem have been conflicting Many surgeons avoided operating on varicoceles because of the poor results and frequent complications. Newer concepts of the physiologic disturbance have been developed, however and accordingly surgical principles and technics have been improved. Reports in the medical literature in recent years indicate a more universal acceptance of the surgical correction of the varicocele 1-1

This article describes the physicanatomic causes of varico celes shows several illustrative radiographic studies, and men tions some experiences with 26 cases

PHYSIOLOGIC CAUSE FOR LEFT VARICOCELE

The venous outflow of blood from the testis and epididymis enters the parpiniform plexus of venis in the scrotum This plexus is drained by a number of venis, and to facilitate this discussion of varicocele they can be divided into two groups. First, there are several venis which ascend in the spermatic cord and coalesce near the internal inguinal ring to form the internal spermatic veni. This veni courses upward behind the peritoneum to join the renal venion in the left side and the inferior vena cava on the right. The other group of venis draining the pampiniform plexus are collateral venis. These venis leave the parpiniform plexus near the neck of the scrotum and connect with venis of the thigh, pelvis retropublic region penis and scrotum (fig. 1A). Anatomic dissections by El Sadr and Vlina have nicely demonstrated this system of collateral venis.

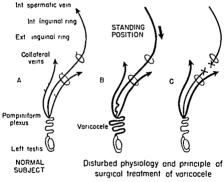
Due to factors poorly understood the valves in the left internal spermatic vein are prone to become incorripetent much more fre quently than those in the right. When this occurs blood flow

Fm US-Amy H pal Camp R k Al Dr Line ow 11 V is Bld g Challt TV

downward in a retro-orade direction in the vein when the person is in a standing position. The pampiniform plexus becomes over distended The collateral veins become well developed but are not able to compensate for the increased load. The result is a varico-cole (fig. 1B). The varicocele therefore is truly a mechanical disorder just as varicose veins of the legs.

OPERATIVE PROCEDURE

The operation which is generally advocated at present was originated by Ivanissevich and Gregorian in 1918 and repopularized by Bernardi in 1941. The purpose of the operation is to interrupt the incompetent internal spermatic vein and thus halt the retrograde flow of blood into the varioccele (fig. 1C) Ideally this interruption should be done at the terminal end of the vein however from a



Figur 1 (A) S bematic d wig f the veno d inage of the p mp iform ple as in mormal per n. (B) The li d residion in a inding p list is with a scote k i the Mograd flow the momp i i nie mal p matic v n. (C) S lustion f llow g se tion f ll, i buta se f the internal perm the

practical viewpoint it is best done in the inguinal canal near the internal in, uinal ring Interruption at this level will halt the retrograde flow of blood into the varicocele and at the same time preserve the collateral vessels Technically the operation is not

difficult The spermatic cord is mobilized through a short inguinal incision. The investments of the cord are incised, and inspection of the cord structures will reveal two or three prominent dilated and sometimes tortuous veins lying in the anterior portion of the cord. These veins can be isolated easily, and about a 2 inch segment of each should be removed near the internal inguinal ring. It is important not to overlook any significant veins. One other point in the technic of the operation must be mentioned. Some of the patients have an unusually low lying testicle on the left side and this should be corrected at the time of operation. This is best done by drawing up the distal ends of the ligated veins and su turing them beneath the internal oblique muscle. Thus the sper matic cord is shortened, and the testis is suspended in a better position.

RADIOGRAPHIC STUDIES

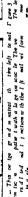
In order to study the vascular problem more completely, radiographic studies were carried out in eight patients with large variocceles and in one normal subject. The venograms were made by performing a venotomy on one of the pampiniform veins in the midportion of the scrotum and injecting 10 to 20 ml of 35 percent diodrast. In four cases roentgenograms were made with the patient in both the supine and upright positions. Two complications followed these procedures. One patient developed an acute phlebitis in the varioccele. In the other, part of the contrast medium extravasated and caused a painful tissue reaction. Both of the complications subsided without ill effect.

Similar studies have been done by several previous investing to the studies of the studies of the studies which were not apparent in the previous reports, namely the visualization of the entire internal spermatic vein and the contrast in the size of the collateral veins in a normal subject with those in a patient with varicocele

The entire left internal spermatic vein can be seen in figure 2. The large caliber of this vein and the tortuous area in its mid portion indicate that it is a dilated incompetent vein. The junction of this vein with the left renal is seen opposite the second lumbar vertebra and the hilum of the kidney. It will be noted that there is not much angulation in the column of the contrast media, indicating that the internal spermatic vein meets the left renal at an acute angle. This is of interest because it is contrary to the universal concept that this is a right-angled junction.

In the venograms in six of the patients with varicocele the extensive system of collateral veins is demonstrated. In figure 3 most of the contrast media has entered the left saphenous and left femoral veins through a prominent collateral channel inferior to the inguinal canal. This collateral vein is one of the external





pudendal veins In figure 4 there is a different pattern of collateral vessels. Much of the contrast media has entered the internal iliac as well as the external iliac vein



Figure 4. In this patient with a varicocele the cont ast medium has entered the collaterals and ca be seen in the internal and external il ac veins

The only roentgenogram obtained in a normal subject (fig 5) shows that all the dye had entered the external iliac vein through a small collateral vessel. This suggests that the collateral vessels are important in draining the pampiniform plexus in the normal person. It is of interest to contrast the size of this small collater all vessel with the very prominent ones in patients with large vari

coceles This is compatible with the concept that the collateral veins in patients with varicocele undergo compensatory enlargement due to the increased load placed on them



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CLINICAL EXPERIENCES

Twenty six patients with painful varicoceles of moderate to large size were operated on using the technic described herein and were followed for at least 3 months. The longest follow up was 16 months. Of the °6 patients 21 had a good result. In each of these the varicocele was corrected and the patient was relieved of pain.

It is important to analyze the five patients with unsatisfactory results In two cases there was an incomplete interruption of the internal spermatic vein, and the varicocele persisted following operation. One of the patients no longer had any symptoms, and no further surgical procedure was advised In the other, a second operation was done 9 months later, and additional veins were ligated The result this time was very good A third patient had an unusual pendulance of the testis and scrotum on the left side. and although the varicocele was corrected this symptom persisted A better result might have been obtained if a better suspension of the testis had been done at the time of operation. The fourth pa tient had atypical symptoms The pain was located in both testi cles, and even though the varicocele was corrected the pain per sisted The fifth patient was unimproved The varicocele persisted following operation, and it was assumed that there had been an incomplete ligation of the veins in the spermatic cord A second operation was done 5 weeks later, and two additional veins were sectioned in the midportion of the inguinal canal The dissection was done with considerable care, and it was certain that all the tributaries to the internal spermatic vein had been interrupted The varicocele remained unchanged, however, and one can only conclude that one of the collateral veins had become incompetent There is no way by which one could ascertain preoperatively whether or not the collateral years are competent. One must anticinate, therefore, an occasional failure

To summarize the results in the 26 patients 21 had a good result, 1 had a good result after a second operation, 3 were improved, and 1 was unimproved There were no complications from any of the operations. Two of the patients had atrophy of the left testis preoperatively, but in no instance was atrophy of the testis caused by the operation.

DISCUSSION

The inguinal operation for varicocele is based on sound physiologic principles and is becoming accepted as the operation of choice 1-7 However, one must still exercise conservatism in solecting patients for operation, because a few unsatisfactory results will be encountered. The varicocele should be moderate to large in size and the symptoms should fall into a typical pattern Usually these patients will have dull, aching or dragging pain in the scrotum or low inguinal region. This pain characteristically becomes worse during and following periods of evertion and will subside on rest. It can be noted objectively that the varicocele will become larger during exertion.

Apparently the pain is due either to the weight of the varicocele with traction on the spermatic cord or to circulatory stasis and perhaps some ischemia of the scrotal structures. The impaired

circulation certainly would account for the atrophy of the testing which is sometimes present

SUMMARY

The pathophysiologic cause of varicocele is described Radio graphic studies may show the various routes by which the blood leaves a varicocele The entire internal spermatic vein was visual ized and the contrast in the size of the colleteral voins between a normal subject and a patient with varicocele was illustrated

Of of patients with moderate to large varicoceles followed from 3 to 16 months 91 had good results. The causes for the unsatisfactory results in five patients are analyzed and succes tions are made to avoid poor results with careful and conservative selection of patients for operation and with close attention to the details of technic good results should be obtained in most na tients undergoing operations for varicocole

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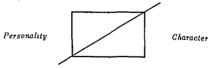
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CHARACTER DISORDER THE TWENTIETH CENTURY "NEUROSIS"

ROBERT L. CHRISTENSEN Major MC USA

Y concept of the nature of character disorder has been forthcoming from the 7 years I have spent in military psychiatry I cannot claim any great degree of original ity for those ideas, on the contrary, my role has been primarily one of synthesis or bringing together similar ideas expressed by a number of people at different times In order to define character disorder as the 20th century neurosis, a frame of reference is necessary it is implied in the title of this article that I believe the 19th century (and I use these time designations broadly, of course) was characterized by something else was psychoneurosis, or just neurosis and it is partly against this relatively familiar entity that I will compare some ideas of character disorder

First, let us try to represent a person in graphic form if we assume a square or rectangle to represent the individual person with all his assets, labilities and those characteristics gener ally considered to be emotional and mental, we can divide these features into two groups classifying them as characteristics either of personality or of character



On one side are those traits commonly grouped under the head ing of personality—happy or sad, gay and lighthearted or somber, optimistic or pessimistic shy and retiring or bold and outgoing tense and high strung or relaxed and placid, meticulous or casual, cautious or daring On the other side are those factors we call character traits—such qualities as honesty, integrity dependability, consistency, social responsibility et cetera, and their opposites

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It becomes obvious of course that at times a particular qual ity may be on one side then on the other of our rectangle or one observer may think that a certain trait is one of personality while another may classify it as a character trait

Such difference of opinion must exist we cannot make nature s plan and complex system fit a diagram or our preconceived notions Further we are faced with the arbitrariness of establishing any such dichotomy

With full realization that this diagram is inadequate let us see what use we can make of it. Two types of adjustment problems can be represented First is the neurosis or psychonourosis wherein the majority of difficulties lie in the area of personality (personality traits here when exaggerated can be regarded as symptoms of neurosis and we are assuming our individual has adjustment difficulties)

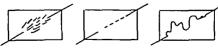


Second is the character disorder wherein the adjustment problems lie primarily in the area of character structure



It is important to note that at no time does the line lie outside the rectangle. In other words, there are no pure neuroses, no pure character disorders—adjustment problems are always a combination of neurotic and character difficulties.

If a trait or maladjustment cannot be classified either as neurotic or one of character deficiency (depending on the observer and the circumstances) the division line will be blurred or broken or be represented as an irregular curved line



Examples of these types of adjustment problems can be given First, imagine a person with both the symptoms of neurosis and the acting out of character disorder. It may be impossible to say which came first, and it may be useless knowledge to know which came first It may be difficult to decide which of the two manifestations of the adjustment problem is predominant Yet in keeping with the usual practice of medicine, we try to explain the entire clinical picture with one diagnosis Sometimes a compromise is reached, a diagnosis of neurosis is made, and the predisposition is the concomitant presence of a character disorder Example Obsessive compulsive reaction, predisposition, pas sive agressive reaction

Or the reverse may be preferred, and we diagnose character disorder and list "superimposed neurotic symptomatology" as a manifestation Example Emotional instability reaction with su perimposed neurotic (conversion) symptomatology

The blurred or broken line actually represents our ignorance or lack of understanding, both of a patient and of the normal as well as abnormal emotional processes involved. Yet we must do the best we can with our limited diagnostic tools and circum scribed understanding of normal and abnormal psychology. No one else can make the diagnosis for us

Now for the other example—the curved line It is possible that an originally neurotic symptom can become infused into the personality structure in such a fashion as to assume the characteristics of a character quirk

Now let us explore the proposition offered at the beginning that character disorders were relatively unknown in the 19th century and are ubiquitous in the 20th

Modern psychiatry began as descriptive psychiatry, and a nonenclature was developed to classify symptom complexes Subjective symptoms were, of course, the criteria, because no objective tests (resembling physical examination) could be per formed to provide a more scientific basis and because there was nothing else on which to base a classification system

Symptoms of neurosis are ego-alien whether they are of organic or psychogonic origin and are the prime reason that a patient seeks out a physician Thus in earlier days only patients with subjective symptoms consulted the psychiatrists it is no wonder that the system which came into existence included essentially only neurosis and psychosis Acting-out behavior on the other hand, carries with it but little of the tension and anxiety accompanying most emotional symptoms

Psychoanalysis, too, in its infancy followed this pattern Treatment of the psychoses presented a dismal outlook, indeed, consisting mainly of custodial care. Thus psychoanalysts concentrated on patients presenting subjective symptoms i ϵ those with psychoneuroses

Some phases of acting out were recognized—they had to be one could not ignore them But in the time honored tradition of medicine they were classed as hereditary or constitutional Probably this is an understandable reaction because many times physicians can do but little nature doing most of the healing When a physician is stumped he experiences feelings of inadequacy and impotence these can be relieved by consigning to the patient those puzzling diseases which he cannot help or under stand—the patient, then is responsible for not having the raw materials with which the physician can work it is in this way that the epithet constitutional psychopathic inferior came into being

As psychiatric and psychologic knowledge grow the idea developed that all behavior was motivated and directed by emotional forces and that there could exist symptoms or symptom equivalents of a more ego-syntonic nature $e \cdot g$ acting-out tendencies

Although the word constitutional was reluctantly dropped from the various terms indicating psychopathy (because our best patho-psychologic technics were uncovering no constitutional or hereditary abnormalities) diagnostic nomenclature prior to World War II listed neurosis (psychoneurosis) psychosis and a polyglot group under one heading—psychopathic personality. The diverse characteristics which could be lumped under this lest diagnosis were astounding. The many connotations of this term ran close second to the diversity of the clinical pictures. This too may have been an expression of resontment toward persons who having a troublesome and relatively incurable disease constituted an assault on the psychiatrist sprestige.

Duning World War II came the opportunity for clarification. The nomenclature of the Army not as rigid and infloxible as the American Psychiatric Association and American Modical Association classifications introduced the term character and behavior disorders. Certainly this diagnosis seemed to fit better the majority of men being seen by military psychiatrists (it appears to be generally accepted now that true psychoneurotics present relatively little problem and function fairly well though often at great personal cost.)

In the military at least, patients with classical psychoneuroses are rare and it is my impression that this is true also in civilian practice. Assuming this impression to be accurate there are several possible explanations. Perhaps the leasening of social restrictions on the expression of sexual and biologic drives is a factor reducing the number of psychoneuroses. Per haps our ability to diagnose and formulate more skillfully has led to our viewing personality structure in a different and, we hope, more complete way nevertheless I believe that the change in attitude to sex does play a part

Also, I believe that the primary problem of this century is that of handling aggressive feelings With more "civilization" has come greater restriction of direct personal and individual expression of aggressive hostility, and also more extensive and destructive warfare Even here, however the personal element is lessened and we often kill our enemies from a distance some times unable to see them, by use of some sort of machine or device with far-maching effects

If, then, hostile aggression cannot be expressed directly, it will come out in other ways Just as psychoneuroses and sexual problems were characteristic of the 19th century, so character disorders and problems of handling aggression seem to be characteristic of the 20th century.

Most assuredly, an area wherein neurotic difficulties may be likely to occur, the sexual area, makes an ideal point of break through of anger Do we then diagnose the hole in the dike or the force and volume of water behind it as the important aspect? Ob viously we should somehow include both, but, of the two, what is behind the dike demands first consideration

More evidence supporting the thesis that acting out syndromes are typical of our times can be found in the frequency with which primary behavior disorder. It is diagnosed at child guidance centers Acting out is a prime objective symptom, and it would be far fetched to think this behavior pattern changes when the child grows up

Indicative of the changing viewpoint is the expansion of the section on character disorders in the newest A P A classification, now definitely larger and more inclusive than the present Army nomenclature that represented the first step in this direction

Here is the classification of psychoneuroses used by the A P A until changes were instituted in 1952

Hysteria (anxiety hysteria conversion hysteria and subgroups)

Psychoasthenia

Hypochondriasis

Reactive depression (simple situational reaction others)
Anxiety state

Mixed psychoneurosis

And here is the closest approach to character disorders

Psychopathic personality with pathological's xuality with pathological emotionality with asocial or amoral trends mixed types

It is significant that, in either the third or fourth editions of Noyes textbook there is no discussion of primary behavior disorders (1934 classification) or of transient situational personality disorders (1952 classification). Consideration of these minor remois will be omitted.

Following is the classification of the psychoneuroses propounded by the A P A in 1959

Psychoneurotic r actions

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sychoneurotic r actions
Anarety reaction
D ssociative teact on
Conversion reacti
Phob c reaction
Obsessive-compulsive reaction
Depressive reaction
Psychoneurotic reaction off r

[And here is the equivalent of character disorder]

Personality pattern disturbanc Inadeq te personality Schizo d personality

Cyclothymic personality Paran d person lity

Person I ty trait disturb nee
Emot onally unstable personal ty
Passi -aggres ve personality
Compulsive personal ty
Per nal ty trait disturbance other

Sociopath c personality disturbance
Antisocial reaction
Dyssocial react on
Sexual deviation
Addiction
Alcohol sm

Drug addiction

Special symptom r act ons

Learning disturbance Speech disturbance Enuresis Somnambulism Other Recognition that neurosis can change to character disorder is implied in the classification of "obsessive compulsive reaction" as a diagnosis of neurosis and of "compulsive personality" as a diagnosis of character disorder Informally, among psychiatrists, character disorder has been carried further to include a "hysterical character structure," and there has even been mentioned a schizophtenic character."

It may be that symptoms, starting as relatively ego alien, with some chronic stress gradually become so much a part of personality structure in the broad sense as to cease being ego-alien and to become ego-syntonic Accepted as part of the self, they are then part of a way of life This then is much more a character adjustment pattern than a psychoneurosis A common case, I think is that of the individual who develops a reaction pattern from infancy, and, for example grows up excessively meticulous and compulsive This adjustment is not ego alien and therefore not a neurosis

I have pointed out some of the differences between character disorder and psychoneurosis—symptoms vs acting out, ego-silent vs ego-syntonic pattern. There are, however, similarities as well. Symptoms and acting out are but different sides of a coin. The neurotic develops subjective symptoms because he does not act out. The victim of character disorder does not develop symptoms (and anxiety) because he does act out his feel ings. Self punishment is implicit in both these responses the motivating source for both is the unconscious. Treatment for either is similar, because the conflicts may be very similar. In treating the neurotic, one helps the patient to work through (take action about) his problems. In treating the patient with a character disorder, one hopes to generate anxiety (symptoms) over his behavior, and over its meaning and unfavorable in fluence.

Basically, then, there are many similarities It would appear that a neurotic symptom can, in a sense develop more per sistent and ego-syntonic elements, undergoing a sort of meta morphosis into what may be better described as a character dis order (sometimes referred to by a compromise term, character neurosis) From an economic standpoint, the factor of fivation of neurotic symptoms by monetary compensation is well known to most psychiatrists, this is, however, a separate subject and cannot be discussed here

SUMMARY

I have tried to define the adjustment problem generally called character disorder, partly by contrasting it against the better understood neurotic pattern and have suggested some factors which I believe account for the predominance of this condition in

mitis a P coliforme that was pathogenic for mice and caused eye lesions in rabbits. The serum of the patient showed agglutinins to a significant level One had to surmise therefore that this group of enterobacteriaceae may be pathogenic for man also

As far as can be ascertained from available literature, the first classification of P coliforms with the aid of single-factor antigen studies was carried out by Eveland and associates The present report is a continuation and expansion of that preliminary publica tion It is based on the results of the examination of 667 cultures 649 of which were isolated during a period of about 16 months (1953 to 1954) One hundred and forty eight of them did not agelutinate with any of the 14 sera used during the previous study They will be referred to as further groups and symbolized as F The 519 remaining strains came from the following sources

Four strains from Japanese soil samples collected to determine if chemical or mammalian fertilizer had been used and 16 organ isms i olated from vegetable samples collected from messes and clubs of the armed services in a study by Col B F Leach and Lt Col R O Anslow of fecal contamination of indi-enous foods in Central Japan

Eighteen strains from patients with diarrhea in Japanese hospi tals received through the courtesy of the Metropolitan Honshu Hospital and the hitasate Institute in Tokyo

One hundred and forty one cultures isolated from patients with diarrhea in United Nations military losnitals and dispensaries ın Japan

One group of 93 strains from an outbreak of diarrhea at a Marine camp in Japan which was microbiologically investigated by the Fleet Loidemic Disease Control Unit (FEDCU) No 2

Thirty one organisms from Lorea received mainly through the 1st Medical Field Laboratory and six strains from the Ryukyu Islands submitted by the Ryukyus Army Hospital

Forty three strains isolated from patients with a diarrheic condi tion colloquially called Hong Long Dog which afflicts crews of naval vessels in Hon, hong harbor The cultures were collected durin three trips to and from Hong Kong on APA type ships by tear's made up of per onnel of the FEDCU to 2 and of the Department of Bacteriology of this laboratory. One hundred and fifty two additional stools for culture were collected from crew members without diamhea during these trips

Five organisms isolated from stools collected by First Lt J Arrington from airmen who returned to Tokyo ill with the so-called New Delhi Belly This was a diarrhea occurring in crows and pa sengers of airplanes on the Japan Year East run

The faur nelus mos fhe trun prider

Fifteen strains isolated by the FEDCU No 2 from Indochinese refugees in Camp de la Pagoda near Haiphong, and 40 cultures collected from ill French soldiers evacuated from Indochina via Janan

A group of organisms of miscellaneous provenance cultures from the Philippine Islands, cultures from New Britain (collected by Lt Col H Baker) stock cultures received from Dr C A Stuart and strains from California of a former study

About 85 percent of the strains from patients with diarrhea were isolated from stools in which no salmonella shigella, Arizona, Ballerup, Bethesda, or Providence bacteria were isolated

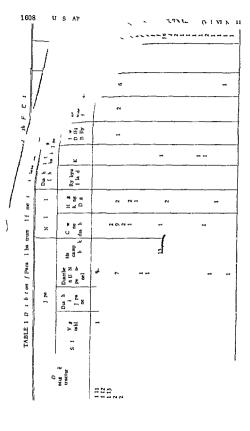
The first attempts to classify P coliforme were made with the aid of biochemical reactions. All strains fermented devitose and mannitol rapidly, with the formation of acid gas. They did not produce acetylmethylcarbinol decompose gelatin nor use citrate as the sole source of carbon. They were methyl red positive and did not form hydrogen sulfide. Exceptional strains failed to produce indole. The cultures fermented lactose slowly, and did or did not attack the following carbohydrates sucrose salicin, adonitol and diletiol. The fermentation pattern of these last five carbohydrates depended so much on the individual strain that attempts to classify P coliforme according to their action on these substances had to be abandoned. It was decided therefore to use agglutina tion tests as the main criterion of type differentiation. Because of the known complexity of the antigenic structure of enterobacteriaceae, only "0" antigenic were used for the primary classification.

Strains that did not react with salmonella, shigella and Esch coli 1 to 25, 026, 055 and 111 sera were selected for the production of diagnostic sera. The cultures were grown on tryptose agar for 24 hours at 37°C washed off with saline solution and heated for 2 hours in the boiling water bath Increasing amounts of this antigen were injected intravenously into rabbits, and the animals exsanguinated when a titer of at least 1 800 was found on test bleeding. The sera were preserved with 1 10,000 merthiolate and kept under refingeration.

Both tube and slide tests were used according to the standard method recommended by I dwards and Bruner As reported in the preliminary communication 14 0" antigens were established which to date have appeared in 123 combinations (table 1)

This enormous variation of the antigenic mosaic may be caused by loss variations. There were isolated for instance from the same stools of the same patients simultaneously the following $P\ coliforne\ cultures$

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Strains with the antigenic structure 3 4 5 are serologically identical with the strain 311 of Stuart They were found in Korea and Japan in diarrheas originating in Hong Kong and aboard U S naval vessels but not on the southern Asiatic mainland The closely related group 34 differed from 3 4 5 by being isolated also from Indochinese refugees and from a French soldier Group 3 4 may however be a loss variant of group 3 4 5 One further serologic combination 12 3 4 5 is of great interest in this connection Members of this group were isolated from patients with diarrhea in Japan and in Hong Kong Strains studied at the kitasat6 Institute in Tokyo (not included in the tabulation) showed that this serotype was frequent in Japanese children afflicted with diarrhea

Group 1° was found in Japan Okinawa Korea and in French soldiers Serologically it is related to Stuart's types 111 4411 26711 and 31611 It may be the parent of group 2 or an intermediate in the variation of 1° strains Group 2 has been found in diarrheas in Japan Hong Kong Indonesia and in one case of New Delhi Belly One has to consider it as a possible loss variant The same holds true in regard to groups 11 and 12 which were rather frequent and were isolated from different geographic locations

Group 2 3 11 was isolated chiefly from an outbreak of diarrhea in a military camp in Japan Thirtoen strains of P coliforme with this antigenic structure were isolated from that outbreak together with four of 3 11 structure and one with 11 antigen alone One additional strain was typed as 3 4 6 11 and two as 4 6 Finally one P coliforme was classified as 7 and one as 8 The study of this outbreak clearly demonstrated the antigenic variations occur rin, in P coliforme

Group 3.6 with one exception was isolated only in Japan and Aorea while group 6 appeared well distributed in Japan Korea Indochina and New Delhi Group 6 may be however the last link in a chain originating from 6.7* 6.11* or any other group containing the 6 factor

It is difficult to discover the source of infection in many a diar their outbreak. This task is even more difficult in paracolobac trum infections because of their antigenic variations Some insight into the circulation of these organisms resulted from a suggestion made by Col. R. L. Mason, who was commanding officer of this inboratory that the teams investigating. Hong Kong Dog aboard haval vessels collect samples from fomites which had been touched by crew members or by troops carried on the ships P coliforms with the antigenic structures 12 12 345 14 345

and 4,10 were isolated. These are related to strains found in man Because the swabbing of fomities with subsequent culture for enterobacteriaceae proved to be a reliable method of determining the presence or absence of fecal contamination of fomities aboard ships (considering the finding of possible enteric pathogens and/or of Each coli as indicators of such contamination) this method was used in subsequent studies of diarrheic diseases.

The investigation of P coliforme organisms isolated from vegetables has not as yet yielded as much sufficient information as is needed. The relatively frequent occurrence of organisms with factors 6, 7, and 11 seems to be significant if subsequent examination confirms this trend in the distribution of serogroups of P coliforme on vegetables. Further study of formites and foods is indicated, for the clarification of the role of these carriers of P coliforme.

With regard to the disease caused by these organisms, para colobactra follow the general trend of enterobacteriaceae by causing more severe symptoms in the very young, the very old, and in persons ill with other diseases. The case of P coliforme septicemia mentioned earlier in this report points to the greater pathogenicity and invasiveness of P coliforme in infants Accord ing to Japanese investigators P coliforme strains are causing serious difficulties among Japanese infants and young children. In the armed services where young and healthy persons predominate. paracolon diarrhea is usually of short duration. It frequently evades attention because of its short relatively mild course and usually prompt response to antibiotics. The number of organisms ingested no doubt affects the severity of the diarrheal attack in each case Disruption of unit function is seldom caused by para colobactra in the Army The situation is different however in the Navy and Air Force, where even short-time incapacitation of a man performing a highly specialized technical task such as pi loting an airplane may be of serious concern While the physically strong adults of the armed services are less liable to suffer from paracolobactrum diarrhea, consumption in distant "ports of call" of unusual dishes and drinks including uninspected food, increases the probability of intestinal infections

So far as is known, all recognized group outbreaks in the military forces have had the characteristics of food borne infections. Therefore the chief measures which may help to lower the incidence of paracolobactrum disease are the same as apply to other food borne infections $t \in t$, good sanitary practice in food service, and the avoidance of unapproved foods and eating places

SUMMARY

Six hundred and sixty seven P coliforme organisms were studted Their antigenic structure showed great variations presumably because of the frequent loss of antigenic factors. There seems to be some difference in frequency of occurrence of various antigenic factors according to geographic origin of the examined materials The fact that P coliforme was isolated in large numbers from many patients in whom no other pathogenic or notentially pathogenic strains were found confirms the statements of previous authors that these bacteria should be included with other para colobactra which may cause diarrhea and other disease in man

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RESEARCH TODAY

Gone re the days of the lone research r pouring o er retorts in the barn or the att c. Modern r search is a matter if teamwork in str mlined labor tories with chrom plated gadgets A singl piece of modern te earch equipment m y cost s much a a busy practitioner s annual gro s income P thap s me new Curie Pasteur or Koch may flash acr s the sc nt fic firm m nt n the future lone worker with sh bby qu pment B t the odds are against it The single d dicated w ker n his ba ment labo try has probably go e th wy of th ne horse hay the little black b g a d the eleg t four ngred ent pre cript on.

> -EDITORIAL in I wonal IM d IS ct ty I N w J y p 382 July 1955

FUNCTIONAL ASPECTS OF NASAL PROSTHETICS

HAL B JENNINGS Jr L eutenant Colo el MC USA
JOHN H TENERY L utenant Colon l MC USA
AFLRED C FONDER Capta n DC AUS

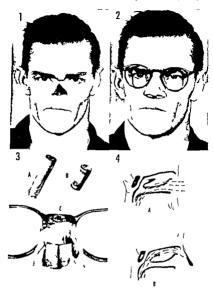
THE successful use of a simple device which improved the comfort and respiratory physiology in one of our patients prompts this presentation. It is offered with the hope that is modification and use in other applicable cases may be of benefit to patients.

Slight modification of a commercial crystal type cigarette filter was used as an adjunct to an acrylic nose prosthesis to effect the improved physiology and comfort of the patient during his period of pedicle tissue preparation for permanent nose reconstruction. Due to the gaping defect in the anterior nasal passage (lig. 1) caused by the traumatic loss of the nose the entire physiology of the nasal airway was deranged. The absence of nasal vibrissae prevented effective filtration of dust and foreign material from the inspired air. In loss of the nares disrupted normal circulation of air through the nasal cavity crused loss of the warming and humidifying effects of turbulent air flow, and in turn caused the patient much discomfort due to irritation and drying of nasal and pharyngeal mucosae.

To improve cosmesis during the pedicle-tissue preparatory phase of the reconstruction, an acrilic nose prosthesis was constructed (\hat{l}_{ic} , 2). This alone relieved some of the symptoms referable to mucosal dehydration. At the patient's suggestion however, an unmodified plastic cigarette filter's (fig. 3A) was cemented internally into each nostril opening of the nasal prosthesis. Because the impedance to air flow caused too much respiratory effort for adequate air volume the filter was cut in half, the amount of filtering crystals reduced and the plastic ends of the filters were replaced by nonrusting metal screens (fig. 3B). These simple modifications (fig. 3C) facilitated air flow and effected the stoppage of symptomatic discomfort formerly experienced by the patient. The crystals in the filter were effective in removing dust and authorne irritants. The angle of the filter tubes produced a more normal physiologic circulation of air (fig. 4, A and B)

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f wer cry tal nd m t l cr ns nds. (C) R er ide f pr th with modified file place. Figur 4. (A) Diagrammatic ore rit in mall p sage with ut p the is (B) Diagrammat are urrit na lipa sage nd fult in pla u th pr the

through the nasal passages allowing greater warmin, and humidi fying of the inspired air

With a little imagination these filters could be adapted for use in other patients requiring the directional and filtering effects

REFUGEE PROBLEMS IN

THO AS A DOOLEY III Lieutenant (== ==

TN JULY OF 1954 after the Genevi —
French and Vietnamese officials was creat capital of Tonkin, Indo China. To Vietnamese governments requested that forces in evacuating from Tonkin all the state of movement was to be permitted accoming

America turned and in the second were at Menari the L.S.S. Montague, and said force 90 sailed into Baie d Mong acceptance of Huphone By I September ticipated in the evacuation

Ender the direction of Commander Frace ledical Officer Tasi Force 10 and Commander Julius Amberson (MC) [3] and Epidemiological Unit was organized was to establish liaison with the Frace authorities and to prevent the sprace American vessels involved in this "Factorial Commander of the Sprace American vessels involved in this "Factorial Commander of the Sprace of

According to the fourteenth clauses anyone who lived in Communist Views a 17th parallel who desired to move to south would be allowed to do so and a

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Then as the Vietminh controls became tighter the numbers be came smaller and smaller

The French Navy with the co-operation of the U S Navy did some heroic off the beach rescues and in one week for example brought over 18 000 people from the area of But Chu tust south of Haiphong behind the Bamboo Curtain to their freedom here in Haiphong The refugees then became escapees In November 1954 the numbers again swelled Over a half a million refugees passed through our camps and 189 316 were transported south on American ships There were 109 births and 53 deaths on the United States ships These refugees were desolate and miser able depicting an eloquent picture of despair yet their faith and spirit and belief in righteousness was outstanding Task Force 90 did a noble transportation 10b

In the last week of August 1954 the first refugee camp was completed This was called Camp de la Pagode and was built by the United States Foreign Operations Mission in co-operation with the Military Assistance and Advisory Group with the medi cal planning and administration done by this unit in liaison with Haiphong Public Health Services The French Army furnished the rannower

EPIDEMICS IN PAST YEARS

As a guide to what could be expected in the way of epidemic diseases Vietnamese public health statistics and French mili tary statistics were also thoroughly reviewed. From these statis tics it appeared that the diseases most to be feared in epidemic proportions were choiera dysentery typhoid and plague but during the operation none of these were seen in any significant numbers However cases of malaria tuberculosis, trachoma beriberi and other common tropical diseases were seen by the hundreds

EPIDEMIOLOGICAL CONTROL

For six weeks the Fleet Epidemiological Disease Control Unit No 9 (FEDCU) from Japan was incorporated in the Preven tive Medicine and Epidemiological Unit This unit collected specimens took innumerable photographs classified rodents and other animal life made peripheral blood smears and did an ex haustive study of the city water works and general sanitation of the area

INOCHILATIONS

Under this unit a supervision Vietnamese Public Health nurses vaccinated against cholera and smallpox almost all of the ref ugees in the camps before they were put aboard American ves sels The vaccines were obtained through the U S Foreign Operations Mission.

Twenty four large boxes of supplies, made up by U S Foreign Operations Mission and given to Public Health, were distributed to the Control Teams, consisting of Vietnamese doctors, nurses, and midwives, who traveled on the United States ships carrying the refugees south The Control Team would then five back north and repeat the trip on another ship These boxes contained sulfadiazine, aspirin, APCs, chloroquine a small amount of DDT, minor surgery equipment and solutions, boric acid, swabs cotton dressings, hexylresorcinol, Brown mixture tablets, and sodium bicarbonate. They were resupplied by American Aid in Haiphong.

CAMP DE LA PAGODE

Camp de la Pagode was the first camp to be constructed It started as a 100 tent camp in the second week of August 1954 and grew to a total of 149 Army style, 20-man tents Its daily census ranged from 2 000 to 12 000, but the mean was about 7 000

The tents vere arranged in rows of 12 There was a broad roadway through the camp which was situated 1 mile from the highway 5 miles from the city of Haiphong The camp was sur rounded by rice paddies Electricity was rigged in November There was an elaborate set of draininge ditches running on all sides of each tent, joining and flowing on each side of the roads These functioned well and kept the tent camp from flooding during the monsoon season in August and September

The broad fields and paddies surrounding the camp were used as the latrines 'bout once a month we would spray these fields with a 1 percent solution of lindane (1 2 3 4 5, 6 hexachlorocyclohevame), 15 gallons to the acre

The camp site itself was sprayed once weekly with lindane This tool care of the fly problem adequately even during the hot damp months

There was a redical sick call tent and two hospital tents which were full rost of the time Only patients with serious diseases were treated in the hospital tents In the beginning of the operation the Vietnamese Public Health furnished a doctor at these sick calls every other day, and in the interval the very capible Vietnamese nurses would run the sick call By 1 December however, almost all of the Public Health doctors had moved south and the Preventive Viedicine and Epidemiology Team doctor held sick call every other day

As the main mission of the unit was to prevent the spread of epidemic diseases only those illnesses of an acute or epidemi ologically dangerous nature were treated by the unit physician There were as many as 200 people at 1 days sick call Common decency however demanded that one be generous with the oral penicillin as well as the soap which proved excellent in the cleaning up of the severe staphylococcus infections of the scale that are so prevalent in Tonkin

The respiratory diseases which were high in percentages were handled with terramyoin (brand of oxytetracycline) and the Brown mixture tablets Dysentery was assumed to be amebic and usu ally in the chronic stages. In acute stages it was treated with aureomycin Vitamin deficiency diseases were common beriberi being by far the most prevalent Multivitamins were given and although the refugees only stayed in the camps for a week or so before being evacuated a definite improvement could often be seen Perhaps we do not realize the efficacy of our mundane prescription 'fultivitamins tablets one daily

Epidemic diseases of cholera typhoid and plague and yellow fever were not seen Fulminating diarrheas were seen in three children who were living in the yard of a small mission in hien An (about 10 miles from the city) while awaiting other members of their families to escape from behind the Bamboo Curtain The unit doctor was called by the parish priest As the French lab oratory units had gone to Saigon and the City Hospital of Hai phong had few facilities an exact diagnosis could not be made Based on the rapidity and extent of the dehydration the muscle cramps and the general severity of the disease process it was assumed to be cholera. The treatment consisted of fluids given subcutaneously morphine and sulfaguanadine One child died and the other two made uneventful recoveries. The particular hut on the mission grounds in which they were living was burned and the surrounding area given a thorough spraying with two percent lindane The adjoining latrines were filled with lime and later sprayed with lindane No further cases of diarrhea were noted This was the closest thing to an epigemic disease seen thus far in the Indo China evacuation

Helminthic infestations were present in over 90 percent of the refugees A cursory glance into a latrine area would reveal a pathologic museum of intestinal worm specimens

Fungus diseases especially due to tinea involving both scalp and glabrous skin and usually complicated with a secondary infection were frequently seen Clinically typical cases of favus were commonly seen in the children

haws especially of the face and the less was seen occa sionally A few injections of penicillin plus local measures brought about excellent results

The Fleet Epidemiological Disease Control Unit laboratory found mosquitoes of the genus Aedes and public health statis

tics indicated that there had been proven cases of dengue in past years, but it was my good fortune never to have seen any No rickettsial infections were seen, but body lice were common, and the dusting of all refugees with DDT was directed

The Culex mosquitoes were found, though only a few cases of filariasis were seen Filariasis is more common in the mountain areas than in the Tonkin delta from which most of our refugees emigrated

Malina due to Plasmodium vivaz was a common cause of death among the children in the camps and on the ships. Many had a fullminating fever and marked splenomegally but no other symptoms. The vector was forever present in Tonkin and especially bad in the rainy seasons. Laboratory examinations by FEDCU of peripheral blood smears proved P invaz more common than Plasmodium falciparum or Plasmodium malanae in cases studied in the Haiphong area.

WATER PURIFICATION

At Camp de la Pagodo, water was taken from the nearby rice paddy and purified for consumption by the refugees During the months of October and November as much as 12,000 gallons a day were purified The optimum was 1 gallon per refugee per day

We used the gasoline engine driven portable 15 GPN Wallace and Tiernan Water Purification Unit, 1910 model, available in the Marine Corps Supply Catalogue Except for very minor repairs they worked daily for the 137 days and will probably continue their fine record if machines could be awarded letters of commendation these two should have them

The principle was to lift water from an available source, run it through a sand filter, through two chemical feed tanks, one with alum, the other with soda ash and finally through a hypochlorinator which feeds chlorine solution to a residual count of one part per million. The water was put into a 3,000 gallon, rubber storage tank where it was allowed to settle and then pumped into a second tank where the water was clear and potable. A hose and a spigot completed the machines.

Some of the difficulties encountered were the following the particular paddy from which the water was lifted had to be fonced off with barbed wire because the refugees would was their feet, food, and livestock in it. One morning the whole rice paddy was black, and there was no other discoloration in any of the adjacent paddies. After much concern and investigation it was discovered that the cause was a vegetable dye that a peas ant had used to color her clothes black for the winter. She dumped the concentrated solutions into the rice paddy when she had finished with them.

On several occasions our rubber tanks were slashed with a kinfe, believed to be an attempt by Communist sympathizers to foil our work The Vietnamese were able to sew these and vul canize them with some sort of asphalt We finally erected a barbed wire fence around the water tanks and posted a 24 hour Senegalese French guard No further difficulties were encountered

CAMP SHELL

In August Camp Shell a small camp for the overflow of refugees from Camp de la Pagode was built near the site of the latter It had a capacity of 2 000 Construction and sanitation were identical A 3 000 gallon rubber storage tank was erected and 2 000 gallons of potable water was delivered daily from the City Service of Hainbong via a leaky water trailer.

CAMP CEMENT

In the first weeks of December it became obvious that another camp would have to be constructed. A new camp was built and christened Camp Cement because of its location near a large cement plant. On the day of its completion 3 500 refugees moved.

There were 64 tents of the same type as in the other two camps. The daily census was around 4 500. This camp was in better condition than de la Pagode because the ground was higher and drer.

Three latrines °0 feet long 5 feet deep and 3 feet wide were constructed and edged with pierced steel plating and a 5 foot apron of crushed stone A 5 foot high canvas vindbreak was built around each latrine and painted with ° percent chlordane (1 gallon to 400 squaro feet) Seat space was no problem as the natives squar tather than sit

The latinos were on the downwind side of the carp 200 yards from the nearest rice paddy and 500 yards from the water tanks Because there were always a fow inches of water on the bottor of the latinos crude oil was noured on twice weekly Once a week lime was poured in to destroy the fees and the whole area vas sprayed with a ° percent solution of lindane (1 gallon per 300 square foet) This helped to control the ever present flee fly and mosquito problem Once a veek the three camps were given a general sprayin, with a 1 percent solution of lindane 1, gallons to the acre

The tents were floored with steel plating on which the natives put their straw mats. The tents were dusted with 5 percent DDT powder from time to time. In certain dirty parts of the camp such as the garbage disposal areas 5 percent DDT in kerosene was

used weekly Aerosol bombs were used in the medical tents when needed As in the other camps, Camp Cement had two medical tents, one for hospitalization and one for sick call

Areas were marked for waste disposal, signs were put up around the camp to point them out, and three or four times a day the people were reminded by loud speakers to use them Never theless, only about 50 percent bothered to use these areas Be cause the problem was extremely severe in the hot summer months, a solution was attempted, but in oriental lands such solutions are seldom achieved The tradition is just to throw the garbage behind the tents. The fact that this happens to be the front of someone else's tent seems unimportant to the inhabitants of both tents concerned.

Rodents were present but they did not create a problem Means were not available for a thorough deratization. As each ship was relieved, it had a thorough deratization at its home port. Drain age ditches were put around each tent and around the camp From time to time, when the tides were extremely low and the corresponding level of the rice paddies low, the water in the ditches became stagnant During these times, however frequent spraying prevented the fly problem from becoming overpowering

Two large 3 000 gallon rubber water tanks were set up, and the city delivered water to one tank Because the water was of quest tonable purity, it was run through the filter and the hypochlorin ater and then put into the second tank A hose and spigot al lowed the refugees to draw it as needed. The tanks and machinery were enclosed by barbed wire and a guard was posted.

The Vietnamese government took over one tent and set up Army recruiting offices About 100 men would join daily. There were other tents for the passing out of American aid which consisted of 600 grams of rice per day per refugee, mits, firewood, vegetables and blankets. The United States Information Services passed out information pamphlets by the hundreds. Posters throughout the camp indicated the location of various key places and disseminated information on general subjects.

The general spirit of the camp was good, and the co-operation between the \(\text{U}\) intenances and ministrators and this unit was excellent From time to time the problem of refugee administration became very difficult, but it was always resolved to the satisfaction of both parties because the common interest was the rapid evacuation of the refugees of Tonkin

EMBARKATION SITE

The refugees were dusted with DDT at the embarkation site on the river before they were put aboard French LSMs (landing

ship medium) and taken down the river to the American transports anchored in Baie d Along

Five men handled the DDT guns which were attached by a hose to a compressed air machine and 5 percent DDT powder was used The first man would dust the refugee s head thorough ly the second the inside of his hat and some of his baggage the third would push the gun up the front of his shirt the fourth up the back. The fifth man would attempt to get the gun down the front of his pants. This usually mot with difficults but because the Vietnamese have sparse public hair it was not considered essential. The unit medical officer observed all refugees as they came down the line to prevent any refugee with obviously serious or contactgious disease from boarding.

The Vietminh mentioned our DDTing in thoir ant American propaganda telling the people that it was highly poisonous and that the Americans were doing it to harm them As a consequence the refugees even after spending several days in the camps were still extremely approhensive at the embarkation site

Representatives of various charitable organizations of the Vietnamese government were at the embarkation sites. The refugees were given about one dollar sworth of pasters a loaf of bread wrapped in a propaganda leaflet blankets and diapers for the infants Public Health had a mobile medical ambulance and emergencies were treated by the Vietnamese nurses and this unit is doctor.

Embarkation was carried out two or three times weekly in Au_sust and September Then it slowed down and now in Docember the refugees leave at the rate of 6 000 every 7 or 8 days (on American ships)

SHIMMARY

Observations and problems encountered in 5 months of working with the refuçees of Indo China are presented. The construction sanitation and epidemiologic aspects of the three large rof uges camps are discussed Free mbarkation delousing vaccination and medical observation are presented. It is hoped that this article may be something of a guide for military physicians who may find refugee movements within their ken in the future

The ta of the edy llow black brown and white man eall the see—Matin T Fisch

PROBLEMS FACING MILITARY MEDICINE

HONORABLE DEVEY SHORT

A short excerpt f om this spe ch was quoted in an article entitld Medical and Dental Officer Ca ee I centive P og am who ch appeared on pages 1469 to 1475 of the October 1955 issue of this Joutnal Because of quests for the full text of the speech and with the kind consent of Congressian Short the complisheech is be ngr print d f om the Congressio al Record — Editor

Mr Chairman ladies and gentlemen it is with some trepidation that I appear before this distinguished gathering today I have tremendous respect for doctors not only doctors of medicine doctors of osteopathy doctors of philosophy doctors of dentistry but also for doctors of divinity But rarely in my life have I appeared before a group who quite recently would probably have very cheerfully cut my throat—and who possess the skill to do the job neatly

I am referring of course to the recent extension of the Doctors Draft Law which passed the House and was signed into law on June 30

In my own small way I undoubtedly have contributed to the potential displacement of some of you for a 2 year period

It is an unfortunate discriminatory piece of legislation this Doctors Draft Law but I want to assure you that it is absolutely essential

Perhaps it is the penalty you share for belonging to a very select organization. As physicians and surgeons you hold an extremely re sponsible position in our economy. You have studied long and hard you have met the best competition and only the finest survive

And because your services are so much in demand it was necessary for us in the Congress to enact legislation to compel you to serve in the Armed Forces even though you are beyond the regular draft age

Now 1 want to discuss this subject with you today because it is important not only to you and your colleagues but also to the civilian population and our armed services

Statistically we had no choice but to extend the Doctors Draft Law The draft age has been reduced to 46 from the old age of 51 and from what I can gather from the facts that have been presented to us doctors will be taken up to that age during the next 2 years

R d befor the Potgraduat M dical As embly of S th T s H uston T

We e ed the situation with regard to physicians and drist who are now over 35 and who previously pulsed for a commission in the med cal or dental corps and were rejected for physic I reasons but we could not me that provision retroactive for the one serving on active duty. That also a discrimin tory—for the doctor who was ble to stay out of service and who meets the criter of this am nd ment will not hey to serve while the doctor who is now serving on cite duty who otherwise could have met the criter a must remain on crive duty until he complet is his oblig ted period of service.

Wherever we turn in this whole m npower problem we face inc n sistencies and discrimination even the regular dr ft ct is discrimination arony. Some must s rive and oth is are defer ed. Those who re he lithy must go tho e who are disabled remain behind. Tho e who re eng ged in esse tial fundistry are deferred those who are not mu { crve.

This whole idea of compulsory service is epugnant to me and all ways will be bt I am als pratical e oghtor el ze that our Nation must possess an armed force e pable of d fe ding thi. N tion should the cocas on rise And the health of our armed services must be paramount in our this king.

O e of the seriou problems that we fixe in this Nation is a shortag of doctors and a fix s. I mecone ned the i implification of platic ng physic ans

I do not blee the four model schools are ad quat in sze to gradu te the number of detos that our comy request And un fortun tely see we rell hurn beings the natur lendency of many physici to go to larger ctes when the ptents a en mill are and where the level of neome shigh ghto just fy the ging root blee

That me n that we have are s in this country that are n d quitely tifted with doctors And is fir as I can see thit is tuation will reason with uniform who counters we they not the steps to incree sether put of medical students in the output of medical school grid uate. I would like to see that accomplished with is little Federal number of the medical pool blid.

It is not my purp se to deliver a erm n b t I would like to giv you some of my d a with regard to thi whole problem of medical care

Obviously we cannot continue the doct is draft law for a indefinite period. Therefore the arm diservices must find a procurement method other than the doctors draft law.

Now so long a we here the regular draft law in effect we will be but to obtain four hare of med call school graduates since nyon who in deferred for any reaso ander the regular draft remains liable for induction up to age 35. But we can't depend entirely upon midical

school graduates as a source of doctors for our armed services because then we would be depending entirely upon young men who have just completed their internships. The armed services need specialists and experienced physicians just as much as any other group of people. But we are not attracting experienced physicians and specialists in our Armed Forces on a career basis. And that calls for a little selfanalysis.

Why aren t we getting more doctors to make a career of the armed services? Is it economic?

Yes partly It is a little hard to compare a major s pay with the \$15,000 net income annually of the average practicing physician in the United States

But I don't believe it is entirely economic. Pay is not everything I think it may also involve the dignity of the profession the constant changes of station and perhaps to some extent the unintentional subjugation of professional initiative.

I am convinced that the average doctor has a unique personality of his own a rugged individualist—if you will. He has to possess that sort of personality otherwise he would never have had the courage and stamina and determination to spend 4 years in college 4 years in medical school a year of internship and 2 3 and 4 years in residency training before he considered himself qualified to practice medicals.

And I suppose the average physician is not willing to enter into a form of regimentation in which his own personal attainments and ability will not be rewarded in proportion to his achievements. I be lieve that too may be a factor in this medical procurement problem in the armed services.

I don't know the full answer although I can assure you that it is being studied carefully with a hope that some solution can be found Basically the medical situation in our armed services is one of supply and demand So long as the demand exceeds the supply the attractive ness of service life will undoubtedly take a back seat to the normal civilian life where the physician is his own boss

The ultimate solution to the whole problem of supplying doctors for our Armed Forces and also for the civilian economy is a substantial increase in the number of doctors

While the doctors draft law was under consideration in the House and in the Senate Members of Congress were besieged with telegrams and letters from doctors urging the elimination of the doctors draft law. The contention was made that if dependent medical care were abolished and all other persons now entitled to medical care from service doctors were defined this benefit there would be no need for a doctors draft law.

Well I want to discuss that subject because it is of fundamental importance to you and to the Armed Forces. The number of individuals

who are theoretically e titled to medical care from service doctor is large But when you compare the actual tatistics of medical care furnished to person other than se vice personn l t n becomes apparent that the ex sting legal e titlement is not being bused As a matter of first if all medic licare were abolished for all personnel now entirled to medical cale from the armed envices other than armed service pers nnel and their dependents we would only be able to eliminate about 40 of the 10 000 physicians n w serving on acti e duty with the armed service and the Public He lth Service And if we abol hed all dependent medical care 1 the United Stites we would only elim nate an addit onal 581 doctor from the armed services and the Public Health Service

The next co tention w s th t th r tio of physicians to armed or ices personnel s unre listic-too h gh. It is now approximately 3 044 n r thousand and you will hear st t ments made that this a so much greater than the civil an population that t but usly can be substan tially reduced

Well ladge and gentlem n medicine in the arm diservices is not confined solely to tre time ery cemen who e ill Som t mes w all verlook the very basic reas n th t we have an Armed Force W contantly trive t impo e upon our atmed service the same bis ness tandards that apply to the United States Steel Cope General Motor H mble O ! nd countless ther groups n the c untry But you c t comp e prod ci g corpo ation with n i surance pley Our Armed Forc s exi t so that those corpo at ons nd the p ple who wo k for those corp rat us d the doctors and dent ts and veterinaria s and m Il busine s own s nd farmer and railro d ngineer nd stu dents and mothe s and fathers a d e ybody lse in this United States ca continue to live in feedom Of course m nt ning our Armed Forces is co tly Fa tast cally exp ns ve And of c urse there was Of curse there i duplication un ece sary tr s port tio administr ti e m takes poor decis ons b d buy ng but we are d along with n org nization which employs almo t 5 mills n people n p nizat on that spends 65 ce ts out of ev ry Feder I tax organ z ti n th t pends between forty a d fifty bill on dol lars unually an og nizat on who e exp nditures e ceed the incom of 18 of the la pest cornor ton in the lint d St t

The Armed Firce sntabusi s oprtin It exits for the purpose of p servi g thi A tion And in o der t preserve this Nat on we have to have m n me tally and physically fit to perfo m all type of duty

We have to have doct is whe know how to propage for the midel supp rt of an mphibio s operat We h v to h e docto s wh know Il f the med cal pr blems of l gistical support of a land operation we have to have d ct r who ar f mil ar with the human phy ical limitations in the problems of space we have to have docto s who re experts in field sanitation preventive medicine and all of our doctors must have some conception of what a military organization is how it functions and what their responsibilities would be if they were called upon to take command of a medical battalion.

So all the time of a doctor in the Armed Forces is not confined to the treatment of people who are ill perhaps some doctors spend most of their time treating patients but when that doctor is serving in that capacity another doctor is studying a supply problem or a study involving the results of underwater demolition or the proper way to treat victims of nuclear warfare

So it is not quite fait to our armed services to compare the ratio of physicians to the civilian population and then conclude that the ratio in our armed services should more nearly approach that ratio. The problem in our Armed Forces is to keep our people healthy and not wait to treat them after they are sick.

I am not trying to defend poor administration for I would be the first to admit that there are undoubtedly a few places in the Armed Forces where improvement can be made in the proper utilization of physicians and their skills And I can fully appreciate how a pedi atrician feels when he is called upon to leave his own practice only to end up in a dispensary treating the children of service personnel And that of course leads me to the various problems of dependent medical care

Now traditionally we have provided on a space and facilities available basis medical care to the dependents of service personnel. But I don't know of anything that would more adversely affect the morale of our Armed Forces than to eliminate this entitlement. On the other hand it is obvious that we cannot continue in good conscience to draft individuals and ask them to treat the dependents of our service personnel. The number involved is not great—581 is the approximate figure but even if we eliminate 581 that would be 581 less doctors over the age of 35 who would have to be ordered to active duty. So there we are on the horns of a dilemma. Can we jeopardize the morale of our Armed Forces to the extent of eliminating dependent medical care in order to alleriate to some extent the situation with regard to the drafting of doctors over the age of 35°.

Well obviously the answer for the next 2 years is that the Congress was not willing to jeopardize the career attractiveness of many thou sands of experienced men in order to reduce to just a small extent the number of physicians who will be required to serve in our Armed Forces who are now over the age of 35. But we recognize the fact that we must find a solution to dependent medical care. Obviously we are again on the horns of another kind of a dilemma. For if we abolish all dependent medical care in the Armed Forces then many of the physicians who now are willing to stay in the Armed Forces until reaching retirement age will leave since the present diversification

had been no episodes of cough or hemoptysis and no precordial or chest pain except with these acute episodes

The family history revealed that his father died at the age of 6t during an acute heart attack. The mother was living in her seventies and had kidney disease Three siblings were dead one of tuberculosis one of Brights disease and one of un known cause but suspected of having had some form of heart disease. This sibling was also described as being nervous

SUMMARY OF FIRST ADMISSION

The patient was in a state of shock on arrival at the emergency room of the hospital His pulse was 160 to 180 per minute his blood pressure was at shock level peripheral cyanosis was present and his abdomen was markedly tender and rigid. He had had coffee ground vomitus and tarry stools for several days He was taken to a surgical ward with a tentative diagnosis of a perforated peptic ulcer and a nonsurgical regimen (Seeley treatment) was instituted He had a markedly enlarged tender liver and an enlarged heart A cardiologist was called several hours later because of his precarious condition manifested by a pronounced tachycardia rales in his chest and critical appearance He was immediately given digitalis with 1 6 mg of cedilanid (brand of lanatoside C) Oxygen was also given and there was a rather remarkable improvement within the next few hours His pulse rate slowed his lungs cleared the benatic enlargement receded and his pain nausea and vomiting ceased He was transferred to the medical service for further study and treatment where he remained for a month before being discharged as improved

Physical Ex mitten The following pertunent physical Indings were recorded during that admission. There was no thyroid en largement or unusual adenopathy and no abdominal masses were palpated after the acute abdominal condition receded except for a residual enlargement of the liver. The kidneys were not palpable. No podal edema was present but peripheral veins were distended. The thorax was symmetrically developed and there was good expansion. The heart remained enlarged (by percus sion) and apex beat and left border were at the anterior axillary line. Heart tones were fair but no murmurs were heard. The second sound at the acutic area equaled the second at the pull monic area. An occasional permature contraction was present. Peripheral pulses were normal. Blood pressure remained within the low normal range. Neurologic examination revealed nothing abnormal. The fundal attentioles were normal.

Loboratory Studies An electrocardiogram at the time of initial cardiac examination revealed a nodal tachycardia Serial electrocardiograms after conversion to sinus rhythm were described

as "presenting marked left axis deviation, prominent P waves, occasional prenature contractions, deep S waves over right pre cordium, and depressed S T segments suggesting digitals effect "ho serial changes of an acute myocardial injury were seen

Initial roentgenograms of the abdomen revealed no free gas in the peritoneal cavity Findings of a gastrointestinal series in the convalescent period were considered normal A roentgenogram of the chest on the second hospital day showed the bronchovascular markings to be markedly decreased in the right costophrenic angle Within this area, there were two patches of in creased density measuring about 2 cm in diameter The right side of the diaphragm was high, and the heart markedly enlarged in both diameters. A roentgenogram 3 days later showed the right costophrenic angle obliterated by fluid extending upward along the lateral chest wall. There was no apparent change in cardiac shadow Two weeks after admission a roentgenogram showed the lung fields to be clear the heart remained enlarged in all diameters but showed no enlargement of the pulmonary conus in the posteroanterior view. The esophagus was displaced pos teriorly by what appeared to be an enlarged left auricle

On admission, the white blood cell count was 9 500 per cu mm with 91 percent neutrophils and 9 percent lymphocytes, hemoglobin was 13 5 grams per 100 ml The urnalysis revealed nothing abnormal Serum amylase was normal on admission

Course in Hospital The patient improved with digitalization, rost and general medical care. A cardiac murmur was first heard one week after admission, when he was described as having a sharply localized apical systolic murmur, and an accentuated P 2. He was discharged to his home 6 weeks after admission but was advised not to work for several months. Seven months later he was readmitted to the Army hospital in a state of acute respiratory distress. Three weeks before this second admission, an attempt to return to work had precipitated pronounced exertion all dyspinea, and had increased nocturnal dyspinea to a point where he had several severe episodes a night.

PRESENT ADMISSION

On admission his weight was 137 pounds and he appeared chronically ill There was a dusky cyanosis of the lips and extromities with a 3 plus pitting odema of the lower extremities. His temperature was normal, and his pulse was 115 with regular sinus rhythm A harsh grade Ill systolic murmur was noted which was said to be transmitted to the base. The point of maximum cardiac impulse was felt in the anterior axillary line at the sixth intercostal space. The liver was palpable below the costal margin. The loukocyte count, the hematocrit, and the sedimentation rate were normal. The blood ures nitrogen was normal, and there were

no significant abnormalities in the urine. The coentgenogram of the chest revealed an enlarged cardiac shadow much the same as before with increased bronchovascular markings in both lower lung fields. Repeat electrocardiograms at this time revealed the same abnormalities as before with a sinus tachycardia oc casional premature contraction abnormal P waves left axis deviation and abnormal STT segments No essential change had occurred since the patient a first discharge

He was placed in an oxygen tent given quinidine sulfate and the dose of digitalis was increased. His cardiac rate slowed the dyspnea lessened and on the second day he was removed from the oxygen tent His pulse rate on the morning of the third day was in the 80s he was much improved and was hungry On the third day however he suddenly developed cyanosis and died

DISCUSSION

D + M w y In smuch as all of you hav copie of the protocol nd have re d it over we will not go ov r it in detail but will only briefly outline the sal ent points in the hitory indicinic I find as project the che t film (figs 1 a d 2) and ask Doctor C rm ch el first to giv h s int roretat on of the ECG giv n to him this morn n. (fig. 3)

D + C mi h 1 The electrocardiogram hows a sinus t chycardi with a rite slightly in exciss of 100 Thi axis divition is rather mark dly to the left and of interest s the pattern of the deep S way a standard lead I II nd III The are QS wav in le d II a d III Th re 1 a tall R wave n the right arm unp lar e tremity lead and OS complex in the left l g un polar ext em tv l ad We were fur i hed

IX V leads However over to lead V the tans t z ne h s not been re ched and potentials from the epicard I surface of the right tricl wer still b ng r rded In addition there i notching of the atrial comple s in I ads I and II and th P w ve in aVL is diph sic The P waves of V are dipha in ed min intly inverted and the P way through the later 11 ad ar notched

There are sever I phases we can be sure of and several things we can t be sure of Fir t of 11 we can be sure there 1 a 10m t chy cardia I should quit right there In addition there i prol neation f the O-T interv 1 and using Bazett's equation I cal ulated the O T interval with k or OTc if you or fer th term equ l ng 0 45 seco d I believe that the notching of the atrial complexes suggests left trial enlargement nd the contour defin tely suggests left atri l enl rgement I cannot be definitive about the appear nce of the P w ves in the precord I leads I II and III I would n t be at all surpri ed if there i concomit nt right atri l enlargement. The left axis d v at on in

Col F d H M wey MC USA, Med I C with to Off fth Surgeo G Departme f th Army Washingt n. D C

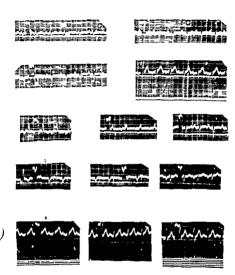
Lt. Da id B Ca micha I (MC) USN U S N val H pital Grea L k 111



F gure 1 Posteroantersor roentgenogram of chest shortly after first admission.



Figure 2 A teropositetion roentgenogram of chest taken on



Fgur 3 Ele toc d gr m take dur g ond dm son

the v c ty of m; u 80 associt d with a QS complex in 1 d II and QS in III suggests to me the poss bility of left ventricular hyper tophy A I indicated moment go I win he h d precords 1 le ds vound the back to se what the contour of the left ventricul records 1 leads really 1 loss 1 ke. H wever ther i an there point that is the transmiss o zon being shifted very far not the left could mean another situation. In the late 1920 Doctors Sylvester McGinn and Paul White desert bed the so-called S pattern of McGinn M he to h you ee in pulmonary embolism. The trinition zince often is markedly shifted to the left in association with this condition. If this were a right of the proper products are something the solution of the solution of the solution is markedly shifted to the left in association with this condition. If this were a right of the proper products are something the solution of th

that assumption by a description quite different in the protocol from what we see here-I think we can in addition to left ventricular en largement also assume the possibility of a cor pulmonale I do not see STT wave changes indicative of digitalis effect and OT prolongation would also mitigate against digitalis effect at the time this electrocardiogram was obtained My analysis then is sinus tachycardia left axis deviation probable left ventricular enlargement and possible acute cor pulmonale and atrial enlargement

I think the first comment to be made about this elec Docto Goy tt trocardiogram is that we are faced with the interpretation of an in adequate electrocardiogram We should have more leads to the left and also high precordial leads. If aVR is taken correctly, and I must assume that it is I think that this patient has either right ventricular hypertrophy and/or right ventricular dilatation and atrial enlargement I agree with Doctor Carmichael that it looks like left but it may be both

Doctor W 1ke I agree with Doctor Govette I thought it was more like right ventricular hypertrophy and it would be very compatible with acute cor pulmonale I would like to add one point The axis deviation is extreme. This is an instance where vector analysis is of great value The axis is approaching and exceeding the minus 90° and we get to a range where it is difficult to distinguish the left axis and left ven tricular hypertrophy from an extreme tight axis and right ventricular hypertrophy I think this a dead ringer for severe left ventricular hypertrophy and I think the P waves in V, are diagnostic of left arrial enlargement

D et Joh son My interpretation is very much like those already given We can have all kinds of interpretations here. First of all 1 didn't think that the complexes in leads II and III were OS complexes but that is not of too much importance because the axis is still the same But I must say I thought more of right ventricular hypertrophy and dilatation. The duration of the QRS is a little prolonged and I think it looks a bit like incomplete right bundle branch block. Other wise I agree

Det Pilo k I agree with Doctor Johnson. I would add that I don t see a true left ventricular complex anywhere and I would like to see it somewhere before being really sure about it But I think this is the other type of left ventricular hypertrophy pattern in which the heart has a very bizarre position with left apex posteriorly

ilo pinal Sa Franci

C 1 Edwin M Goy tt NC USA Chief ! Cardiol sy Serv F tzsim Hospital De Lt. C I Weld J W lk r MC USA Chef I Card ol gy Serv ce Brooke A my Hoptal FtSamHuson T

C 1 Richard P] h &C USA Chief f C rd logy Service V lley Forge Army H r tal Pho izvill P C L Byron E P llock 3/C USA Ch f f Card l gy Serv L tterman Army

- D 1 M w y Our time srpdly passing and you can see there t no un a mity of opin on on the aterpretation of th ECG that is ava ! able I might poi t out this b ut the ECG you h ve No on knows exactly when it w s t k n whether it was take befo e the par ent was fir t sick or whether t was t k n during his I st adm s 10 The pre v us d cript on given in the proto ols referring t this ECG does not agree with whit you gentlemen are intipreting in the ECG Doctor John on what s your dag 15?
- I think thin is an unusual case of theum to vivular heat dise s with vey marked aortic valve teno is and prob bly mutr I tenos s Ib se the diagnosis on the f ct th t a systol c mur mur w head at the apex that could ha bee tr asmitted from the ba e
- y What were these episodes of severe p in that this man had ov a period f 6 yea?
- D + Jh I thi k that th mechanism is prob bly on the ba is of acute hep tic distent on which resulted from right healt failure as soc ated with left he rt f ilure-the so called Bernheim's syndrome Th re wa marked hypert phy of th left v mrich which included the eptum a dencroached upon the volume of the 1ght v ntr cle a d the infer or vena c va w s unable to end its bl od nto the ght s de of the h art s t sfactor ly Th could h v caused th se episodes of acute hepatic d t nto In a other espect I would like to ment on th t very comm n syndrome in m t al st nos s are these episodes of pain a th right uppe q drat They ar o chir ter tie that one might de ibe th m by ay g th t t th o-called g libladder yndrom of m tral st no is Because m tral ste s s s mo e common in wom n it ofte mim c the vindrom f gallbl dd r dise e H wev r n this patient I think the it c ten is was the pedom ting les on a d that he had so- lied Bernheim syndrome to expl in the cut h p tic d ste to
- D + G y ++ Th re is one thing this patient h d that I am sur ab ut I m ure he had t least one pisode of acute cor pulm n le I am go ng t hang my hat on th t one th g I am g ing to trust my int pret t n of the electrocard ogram and say th t I think th s patient had chr nic co pulm n le due to repeated epis des of pulmonary em boliz ti n Th only oth r d agno is I would ent rt in seriously would be th t f ndocardi lf broel st 1 Howe er again t th t di gnosi I think the course w s rather long There are usually predominant sig s f dysp Th re are u lly sy tem emboli It is true that frequent ly ther re p Imonary embol t o but I think the syst mic usually predominate. The elect ocard ogt m oft n hows a bundle b anch block There i freq ntly a po itive family h story I ag ee w th Doctor Joh son that this ma h d pig str pain because of acute diste tion of the live capsule I think p ob bly hi ep sode of so-called vom tig of blood and p s i g of tar y stools w blood which he coughed up Ith ugh f you told me that he never oughed blood t wo ldn t disturb

me in the least because usually these patients do not have pulmonary infarction they just have repeated pulmonary embolization And if they don't have infarctions they don't cough blood I will probably sale on the diagnosts, but they what I am gains to such on.

Doeto Pollock There is interesting material here to select from so I am going to take another viewpoint I think there is good evidence here for a hip left ventricle. The apex was found in the sixth intercostal space at the midaxillary line as I recall at least the anterior axillary line. This is out pretty far and from the roentgenogram it should have been there. The left atrium is enlarged. I don't see how we could get that in cor pulmonale So on that basis I we got to pur a lesion on the left side that will do that and there wasn't any hypertension I could set hizarre and call this sarcoidosis but that is going too far out on a limb so I am going to suggest mittal valve disease with sten osis and some insufficiency producing the murmur at the base. There was congestive heart failure from time to time and probably chronic recurrent pulmonary embolism one of which produced the state of shock at the time of the patient's admission to the hospital and perhaps another severe one that caused his death I agree that stretching of the liver cansule no doubt caused his episodes of pain and I wonder if arrhythmias may not have accounted for some of the enisodes in the past

Do t C michael My first choice is endocardial fibroelastosis. I base this on the fact that his condition is associated with (1) chronic congestive cardiac failure and (2) evidence of both right and left sided embolization—that is embolization of the pulmonary and sys temic circulation and on the course that this man followed It is true that the course is a little longer than is usually seen in this rather rare condition However there are patients who lived as long as 8 years following the initial onset of embolization I believe that this man had evidence of both systemic and pulmonary embolization that he had an enlarged heart with both a left ventricular and left a riel enlargement as Doctor Pollock indicated and if I go along with my interpretation of the electrocardiogram there is evidence of pulmonary embolization and cor pulmonale and also enlargement of the right rice of the heart I accede to the possibility that these endocardial planues could have involved the mitral valve and given the evidence of mirinsufficiency that we have as indicated by the systolic number for as my first choice I chose this syndrome which is valous of a many things but in the latest report by Bland and Cas letter group was called endoca dial fibroela tosi

Doeto O bi on. So far we have had no apt erient but to so it is a recurrent pulmonary or olivation with choins are therefore explaining the recurrent distriction of its restriction of the recurrent distriction of the re

nd additionally so far out on the limb. The ma ked reduction in we obin this pat ent-from 160 pound with relatively Ittle evidence of edema to 130 pounds with conside able ev dence of edem -suggests to me a r ther profound weight loss and as we all know if D ctor Goyette nd I a e right this is recurrent embolization. In a younger person we like to look for the ource of the emboli dw of course are all familiar with the well known d ctum that n a p t ent with re current thrombophlebitis one should always look for carci ona. So I think that we h we to c as der the possibil ty that f this s recurr at embol zation we should cert inly think in terms of a hidden carcinoma poss bly in the abd men or possibly in the pan eas. However we know that it doe n t have t be there and t could be for inst no in the pro t te or n the t tes Ev n though this patie t could ult marely w d up with Bernhe m syndrome with marked left ventricular hyper trophy it s ems hard for m to bel we that a person with a predomi nantly left ided les on could scape having some early manife tat on of respiratory difficulty such a pocturnal or othe dyspnea Except for the acute episodes when he experienced r ther ago iz ne dysone which would cert inly go along with the cute cor pulmonal the signs of ventricular failure predom nate in this pat ent. There are othe things which we should cl rly consider for inst nce the ryousne s and the marked weight I s one little tat ment ev n brought to m nd the de of hype thyro d sm However fre se ing th el ctrocardiog am I must say that I w s included t dismiss th t

Iw uld agree with Docto C much el and I do not think he h left me much to y I th k this pat int prise t obviou p l monary emb lism yet he h s a heart configur tion that is not explain d entir ly on that basis I think he has diffuse myocardial volv ment of both the right ind left ides If I had to tie t ll into one diag osis I would diapnose it as endocard al fibroelastos with parietal endo cardi l thrombo is I think the card ac configuration ugg ts n en largement of all parts of the heart and possible beginning involvement of the v le There s no other obvious ca se her nd becau e the progr m th s afternoon was devoted to a disc ssion of esoter c dis eases I hav chosen th s diagnosis

Do t Mowr y Doct r Pollock did you h ve my thought of up t v ntricular t chycardia poss bly being a cause of his ep ga tr c pain?

D + P II k I do not think so When h came into the hospital his pulse was 160 to 180 and we know that paroxysmal unicular t chy cardi is at a regular rate that you can almost clock. If you take the puls every 15 minutes t should hit the same rate It w s pointed out that he was in shock at that time but a pulse rate of 160 to 180 is more cons scent with what you find in ord nary shock without have g to postul te a paroxy mal tachycard a a varying d gree of t chycardia W do know that at one time he had a nod I rhythm on one electrocard gr m which unfo tun tely w do not have (fig 4) We d know how much tachycard a he had at that time I would not be a

position to rule out attacks of tachycardia but I just do not see the evidence for it and so far as ventricular paroxysmal tachycardia is concerned that usually would not be consistent with the 8 months that passed without his having to have specific treatment. It usually indicates a rather severe disease and severe difficulty which causes the tachycardia

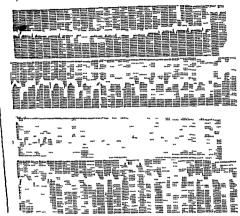


Figure 4 Electroca d ogram first admission. (This ECG was not available to the Go fe ence)

D et Mowr y Doctor Walker will you say a word about this cardiac standsrill that occurred when he was operated on for so-called appendicitis about 3 years ago?

D eto Wolk i I think cardiac standstill is not entirely uncommon during operation. The usual factors that are thought to be important are inadequate ventilation, pethaps with accumulation of CO₃ perhaps there are reflex factors that caused it as indicated by the fact that a common time for it to occur is early during the anesthesia. Anyone with pre-existing myocardial disease would of course be more prone to have such cardiac standstill. I believe It was not stated how rhythm was re-established.

D eto M wrey What disease did you say would be more likely?

O es e Wolke I just said a pre-existing myocardial disease

- D . Hw . That kind?
- D + W lk I think a patient with any kind of myocard all di ease would be more prine to develop ventricular strindstill o fibrillation I had not thought of any particular specific disease being soot ated with card as stand till.
- D: M w y I n: the one d se se th t had been postulated as on of the d cases here—n mely it is stenos s—very commonly a cause of card ac sr nd till and sudden death or ther that card ac sr nd till during oper tion is more common probably n pat nts with aortic sten is than n any oth rive?
 - D # Wik Syncope s common But that wa n t my di gnosis
- D : G y 11 As a matter of fact fibroel st is which w s my numb r two disgons: 1 a very common cause of cardiac standsrill That is why I thought of t Perso s with othe condition ment on d part cularly theumatic heart ds se do ot tolerate oper tin too badly unless extremely decomp nsated H e the abdom n had just be no n d a d the h art stopped and I th nk from what little read g I have done on it t is not at all an uncommon ha cteri tic of f b o
- Dot Mwy While you are till talk g Docto G yette what are th causes of sudden death such as the patient had?
- O + G y H I think in this particular case that the two most I kely possibilities are (I) a massive pulmo ary embolius which caused his d theor (2) quite likely an arrhythmic which p is dripidly into ventricular fibrill ton or began is ventricular fibrill ton due to the selection of the control of the cont
- D + M w y Do you think cy nosis of any particular ignificance in the case ind do you think there may be some type of congenital heart less in here?
- D : G y + I m paying a geat deal of attention to the cyanosi in th sca e When we e cy nosis we think of on of three c nditions (1) A ight to-left shunt which unlly prodices perist in cyanos s (it was not perist in this prient of Id of think that it was the cause of h cy nosis) (2) st si which produces peripheral cyanosi and (3) om sudden i terference with act tion sich as occurs in pulmonary emb lsm or nfarction I think that becaue this man wa always cyanot or with these epi odes and because he died inddenly his death must be pliced on the latter b sis and this is one of the thing to which I h trach d a great deal of we ght
- D 1 Mwy Doctor Johnson will y utalk a little bit moe bot thi ystolic nummur? How does tft n with the dagnosi of mittal teno is or and to stenos?

D ctor Joh son Probably the most common valvular lesion to be over looked clinically is acritic stenosis Lusully the reason for this is that physicians do not listen to the base of the heart they only listen to the aper. But that is not a true explanation. I think that with patients who are sick and who have tachicardia it is very easy to over look significant murmurs. In the diagnosis of acritic stenosis—even though occasionally it happens that the murmur is loudest at the apex as compared to the base—if one listens very carefully in the right space one hears a very classic diagnostic pathologic murmur—the rough rasping harsh murmur of the stenosis. It is much more common to overlook this lesion in patients who are in their 50 s 60 s and 70 s than in a man of this age.

Docto M wrey I could go on with this discussion for some time but I understand that there is a guest speaker to discuss this case. It has been suggested that the diagnosis is (1) heart disease perhaps mittal stenosis perhaps aotic stenosis or a combination of both (2) myocardial fibroelastosis or (3) acute and chronic cor pulmonale. These are the three main diagnoses which have been made.

Dr Johnson's diagnoses

- 1 Rheumatic valvular heart disease with aortic stenosis
 - 2 Bernheim's syndrome

Dr Goyette's diagnoses

- 1 Cor pulmonale
- 2 Chronic pulmonary embolization

Dr Pollock's diagnoses

- 1 Mitral stenosis
- 2 Congestive heart failure
- 3 Chronic pulmonary embolization

Dr Carmichael s diagnoses

- 1 Endocardial fibroelastosis
- 2 Chronic systemic and pulmonary embolization

Dr Orbison's diagnoses

- 1 Recurrent pulmonary embolization
- 2 Chronic cor pulmonale

Dr Walker's diagnosis

Endocardial fibroelastosis with parietal endocardial thrombosis

PATHOLOGIC FINDINGS

Decto Ern t Doctor William Howell t who reported this case in the Texas State Journal of Medicine is here today and I hope he will comment later Doctor J N P Davies Professor of Pathology at



Figur 8 Ph t m cr g ph how g ndoc d m f gh

The entity unde con derat n t day h been vario sly de cribed n th literature as e d myoca di l fibro i or fibro l tos s cardioular c ll genosis endocardi l fib s or f bro is with mural thrombo is nd endomyocardial n rosis

The e rls st accounts of the di ease dalt me inly with hildren but more a d m e rep rts on similar c es in adults are appearing n th literature Cl nically there is c rdiac hypertrophy sometimes It r tions a cond ct on t me with sudden d ath or death a co ges t ve fa lure- Il without clinic 1 or ut psy evidence of cor nary or alvular dı

Anatomically there m y be p t hy or d ffu e thickening nd opac ty of th end ardium co sisting either of collagenous tissue alone or coll genou nd el tc ti ue t geth which may e tend n amo g the muscle f bers along the v cular septa. Added to this there is frequently a mural thrombus o e ly ng the th ekened endocardium with in the chambe avol ed and embolizat on

I gen r l the natomic finding i both the child and the dult bear some resemblanc to e ch other but the e are points of diff rence Mural thromb si s mo frequ nt in adults although t has be n noted n childr n C nge t I defect are frequently encou tered n h ldren

Although the elastic tissue element has been stressed in many case reports there were several rather large series of adult cases reported during the past 2 years in which elastic tissue was not demonstrated

There are numerous other pathologic entities which may cause either focal or diffuse endocardial thickening and these should be ruled out before a diagnosis of endocardial sclerosis is tenable Included in this category are coronary disease with infarcts endocardial pockets appearing beneath incompetent valves a spread of fibrosis from the valves to the endocardium in subacute bacterial endocarditis some cases of rheumatic and diphtheritic myocarditis and disseminated lupus erythematosus. It is not present in congestive failure unless complicated by anoxia due to vascular sclerosis and possible in farction.

Many theories as to its causes have been advanced and one of the most popular when the disease is found in children is that it is a congenital defect because it is frequently roted in patients with other defects. It has been observed in siblings. In some patients particularly adults there is usually a family history of obscure heart disease as in our patient and a congenital cause in these adult cases is sus pected on the basis of a smaller degree of involvement at the time of birth. Infectious disease in the mother during pregnancy has been found in a significant number of cases. An inflammatory cause has been suggested but bacteria have not been found and the patients are usually afebrile.

It has also been suggested that at least some of these cases may be caused by a dietary deficiency disease such as beribert but the findings at autopsy the history of dietary inadequacies or the response to therapy should assist in ruling this entity in or our Myocarditis has been considered but usually no such history is obtainable. Some of the findings in these patients include fibrinous changes with staining characteristics found in other collagen diseases and therefore this entity is believed possibly related to that group

Another theory places the disease on a mechanical basis due to stretching of the endocardium and the dilated heart but a satisfactory explanation for dilatation is frequently not forthcoming

There is one attractive theory particularly applicable to children which places the blame on a situation of anoxia. There have been carefully documented cases where anomalies that could conceivably result in anoxemia of the affected chamber were present. These included the situation where the left cotonary arose from the pulmonary arters and in pulmonary atress where hypertrophy of the right ventricle and fibroelastosis of this chamber were found. It was found in the left ventricle in nortic attesta both with and without interventricular septial defects and in the left atrium and ventricle in premature closure of the foramen ovale without defect. In Tremature closure with a septial defect and atressa of the mitral valve the fibroelastosis was present

in the left atrium but not in the left ventricle. Cases of premature closure with a septal defect fail to show the co dition

Pathologic diagnoses

- 1 Endocardial fibroelastosis with mural thrombosis at apex of left ventricle
 - t apex of left ventricle
 2 Infarct of spleen
 - 3 Chronic passive congestion of liver

(Doctor Howell related the find ngs in anoth r imilar case)

D + E + Are there a y comments from the floor? Or from the panel?

Doctor Davies we should be very hippy to see your mater 1 now a dito hear your thoughts on this eit ty

D I I sa very gre t pleasure to b here a this very fa mous hospital and meet you g ntlem a of the United St tes Army I our part of the world we never seem to see the senior servic and alth ugh we are thous and miles from the ocean we fequently see your colleague from the Navy which lawsys ms abut odd to us

I would I ke to draw your attents n to the entity It is important to us in Afr c because t f rms about one in f ve of all our p tients with co gestive card ac failure. It is therefo our mo t common and import t form f heart disea clinically and to a get extent path ologically W his weight that the terminal because it for the came up as a mile tary probl m being r cognized in African tro ps in Cairo in the middle 1940 by B dford and Con t nce of the Br tish Army Abo t the sam t me in Afric I ndep indently became aw re of the entity and I have seen about 106 case since 1946. In s me p tents the e ch ng s re nimmal and confined to the apex but char cteristically this cin dition pre ent a m s of fibrous tissue t the pex oft n with a rolled r ther sharply defined surf c Th proces may exte d upward to inv lve the m tral valve and the m tr l valve may fus with the ven tri ul r endoc rdium. It may also go down into the myocard um and that s why w c ll t endomyocardi l fibros: A great mass of clot may partially fill the ventricle and undern ath the clot the f brosi is found

The wall of the prum is almost invariably spared Sometimes you so a condition in which the whole of the inside fithe verticle is just a mass of white fibrous tissue I oking if it had been laid on with a paint brush. You may fed a tremendous amount of calcif cation in the endo ardial mass. You also git and not infrequently con idetable calcif cition of the mirral valve it occur on both sides of the heart but there i one difference between the lesions in the right entricle and those in the left ventricle and this is that though bas cally similar if the leion in the right ventricle grow over certain

size it leads to obliteration as we call it of the right ventricle. We recognize this from the outside by a highly characteristic depression of the apex of the right ventricle which is a puckered indrawn scar and we know that when we look inside we are going to see a consider able degree of fibrosis of the right ventricle. You may see a layering of the fibrous tissue which has as it were sealed off the triangular apical area and has reduced the cavity of the ventricle to a saucer. The blood comes in swils in the saucer and goes out through the infundibulum and not down to the apex at all. The tricuspid valve may also be involved in the process.

We have never seen any valvular lesions in the absence of an apical or other lesion of the myoendocardium. The involvement of the different regions of the heart is about equal between the two ventricles but much more severe lesions are present in the left ventricle. In my experience 12 of them were very severe as opposed to only 9 in the right ventricle. The mirral valve is involved in 75 percent of cases and if you are equating competence with adhesions of the posterior cusp then 18 of those cases were in mitral incompetence and 2 of them seemed to be stenotic. The tricuspids were involved in 72 percent the aortic and pulmonary valves are never involved.

The weight of the heart in these African patients tends to be rather low. It ranges from about 130 grams to about 680 grams usually it falls below 500 the weights of most actually ranging from 200 to 400 grams. So broadly speaking these hearts are not hypertrophied.

The incidence of mural thromboses in 32 hearts was as follows 41 percent of the hearts showed mural thromboses in the left ventricle and 16 percent in the right 6 percent showed it in the left auricle and 34 percent in the right Despite this embolic phenomena in Africans are virtually unknown in something over 100 cases. I have seen about three or four of emboli only

The autopsy diagnoses of 231 recent cases of heart failure showed that this disease was responsible for 14.3 percent being exceeded only by 14.7 percent with syphilitic aoritis and 16 percent with renal hypertension. The cause was not determined in 14.7 percent Essential hypertension is virtually not seen and we did not have a single case of coronary thrombosis. In fact. I have not seen a case since I left this country in 1950.

The preceding figures possibly even underestimate the incidence of this condition In 167 cases very carefully studied by my cardiologic colleagues at the postgraduate school of London it was rec'roned that endomyocardial librosis was responsible for 21 percent of the deaths from heart failure in the series Syphilitic acritis and renal hyperension were again frequent coronary thrombosis was absent and there was only one case of thyrotoxic heart failure.

Hi tologic lly lave of uperfici l thrombosis is often present Then ther s a layer of hyali acellular f br us tissue and beneath that the e is alway a l y r of d lated bl od v ssels which we c ll th g anul tion tissue o v scular layer and f th re is any infiltration of cells to any exte t it s usually very minim I in this region. Going dow into the myocard um are treaks of fibrou tis ue around thebesian veins but ther histologic changes are rather ndefi ite O e might see whit is called moth- aten fibers ind inte fibrillary ed ma No e ces e glycogen spe t the intefbrillary edema m v becom very ext em and the myocardial f be s m v actually break dow. There is n evidenc of any I to i It I o diff s from it in the t's ms to be mor a destruct ve r ther tha a p ol fe at ve lesion

Fankly we just d nt know what the au e of this c nd tion is We d know quite d finitely what it is not It might be a virus condit on and f w could e t bl sh more of the g ograph c d stribution we might get a little nearer t I thought it might be r lated at least to Loeffler s d se se but Profe sor U nger whom I m t n the city la t week denies t h tly and as he did the pathology of Lo ffl s disease he o ght to kn w what t s It s c stainly not due t ny known cau of heart d se e There is no coron ry d se se fr as one c n tell there

a cit n wth emia I ha e a trong suspicion th t th s i malnutr tion but I fankly adm t that I d not h ve a gho t of an dea what form of m lnut to a might be I would say that I thick this commo ver most of the tropic I would We n w know that a occurs not only n Lg dabt nth Sud n Wet Africa o the Gold C st

I ber and Il ove ear Africa I have he id of c e occurr ne O is which i p t of the world that you i p reicul rly concer d with I ha head rum is that it occurs in the Philippin and the 1 a recent ugge to that it is one f the commo est d se es of th hill country in Ind At a y rate I think that whin w all put ur of mat on tog the on the future we might find that this i by no

me n as uncommon as w suspect I would point out how difficult it to te ch med cine n a part of the wild whe a heart dis s that au s ne in fi d ath is a type of die not me tioned n t xt books

D + E + D ctor Mattingly will you clo e the meeting?

D + M tti gly I h d th p t ent when I was at B ooke Army Hos pt 1 n 1948 1949 dour final clinical dig osi was idi p thic hy pert phy df lure W cons dered m ny f the diag oses discu sed by the p nel 1 clud ng f broel stos: The pathologic m t r l ha be n vi wed by m y path log st neluding D eto C stleman gr up at M's achusetts Gen ral H spital and the present di gno is wa concurred

Col Th ma W Ma gly MC USA Ch f f Cardiova ul S reic W lie R d Amy Hp I W hag DC

REFERENCE

Vivax Malaria in a Returned Korean Veteran

FRED B ROGERS Li ut nant (MC) USVR

IVAX malaria has been observed for the first time in many korean veterans after their return to the United States Sporadic cases of tertian malaria among returned veterans of horean service have been reported from various parts of this country Such delayed appearance of clinical malaria has usually occurred many months after the cessation of antimalarial suppres sive therapy Problems in diagnosis may result from not consider ing this possibility in those returning from areas where exposure to endemic malaria is known in the present case, the interval between probable exposure and development of symptoms was over 15 months-about 8 months of chloroguine phosphate suppressive therapy plus 7 months after the cessation of therapy The following case is reported to stress the fact that delay in administering adoquate therapy in vivax malaria may convert a rather trivial ailment into a major illness. Also this case empha sizes that when a febrile illness appears in a horean veteran. the possibility of malaria should be considered in the differential diagnosis The increasing incidence of horean vivax malaria recently reported in the United States has been proportional to an au_mented interest in its detection

CASE REPORT

A 24 year old man was in good health until 4 days before admission to this hospital on 30 June 1953 at which time he suddenly developed fever chills frontal headache generalized weakness and body aching These complaints lasted for 1 day and subsided after resting overnight Similar symptoms recurred 2 days prior to hospitalization the second episode lasted about 8 hours. No dark-colored urine or any reduction in the volume of urine was reported during this period. On entering the hospital he complained of high fever severe chills frontal headache and photophobia prostration and aching in the low back and extremittes.

Past history disclosed Army service in Lorea from 13 November 1951 to 28 October 1952. He had served for 8 months as a combat tifleman and later was stationed at Regimental Infantry Headquarters. His duty station had been near Chowon Hurchon and along the northeastern Lorean coast at and above the thirty-eighth parallel. He had taken

Fm Tmpl Invery Hpm Lt Rge now gdt US \val R Surf Ds 425(Hpt I) Ph Lid lphus P

antim larial suppressive therapy (one tablet of chlorogu ne phosphate weekly) in Korea from April 1952 until after bo rd no sh p for return to the United States the following November. He was discharged from the Army in January 1953 in g od physical condition. His health had remained sat factory until the present illness No known contact with or symptoms of clinical malaria were reported prior to this ho p tal ization Pa t dise ses h d included uncomplicated measle and chick enpox in childhood he had also had an appendectomy and a tonsil lectomy

Physical xamin tion on admission showed an cutely ill robust white man Oral temperature was 104 4 F General prostration was ev de t The skin was h t and moist The conjunctivae were moderately co g ted but the sclerae were clear The tonsil were absent the pharynx wa othe w e egul t Moderate sized discrete no te der lymph node enlargement was palpat d in the neck and axill ry and inguinal regions Febrile tachycardia rate 132 per m nute was present with a cardiac ap cal g llop and faint systolic murmur niti lly sug gesti g the possib lity of a bacterial endocarditis. The heart wa not enlare d Blood pre ure was 100/70 mm Hg The lungs were normal The spleen was slightly enlarged to palpation and percussion No flank or costovertebral angle tenderness was elicited Rectal exam nation wa negative All extremit es were normal

Lab atory stud es on admissi n re ealed a normal hemoglobin (13 5 grams) leukocyte count (5 000 per cu mm with a nonspecific differ ential count) and hematocrit (40 percent) The sedimentation rat wa elevated (corrected Wintr be 26 mm per hour) Thi and thick smear of the peripheral blood taken at the time of rising fever and stained by Grem a method were positive for Plasmodium vivax The blood sme is showed tr phozoites and sch zonts in various st g s of devel pment An occas onal gametocyte wa also present R cently liber ted me oz ites were also een in small numbers. Examin tion of the blood confirmed the diagnosis of v vax malar a suggested by the clinical fi dings Liver function stud s (serum bilirubin cephalin cholesterol flocculation and Ikaline phosphatase) were normal Blood cultures were sterile Kolmer complement f ration reaction was very strongly positive (4444) (or 32 Kolmer units) but the Lahn and V nereal Disease R search Laboratories (VDRL) reactions were neg tive (The positi e Kolmer react on was interpreted as a biologically false pos tive test ttribut ble to malaria) The heterophile antibody titer test was negative A urinalys showed normal findings and a roentgenogram of the chest w s negative

During the fir t few days in the ho pital several type 1 paro ysms of tertia m laria occurred A sharp e of temper ture was rec ided reaching over 104 F within a period of 4 h urs then subsiding to a normal level during the subsequent 4 hours Bec use the patient s ill ness w s ervice-connected he was transferred to the Veterans Adm n istration hospital in Philadelph a on 3 July 1953. The diagn sis of vivax malaria once established was reported to the City Department of Health by telephone and post as required

The therapeuric regimen employed in this case was 1 0 gram of chloroquine phosphate initially followed by 0 5 gram 6 hours later then 0 5 gram daily for 2 days. The chloroquine was given in conjunction with primaquine phosphate (brand of &-(4-amino-1 methylburylamino)-6-methoxy quinoline diphosphate) 15 mg initially then daily for 14 days. The patient recovered clinically on the above therapeutic program. No malarial parasites were demonstrated in the peripheral blood and the kolmer reaction was negative before he left the hospital on 13 July 1953. Repeat hemoglobin leukocyte count and thick blood smear were normal following therapy and on subsequent recheck 1 month after the patient returned home.

DISCUSSION

Spurred by global war and the resulting widespread distribution of military personnel, an immense volume of research on malaria has been carried out in recent years. This research has covered a wide field, including studies of the parasitology, and of mos quito bionomics and control measures, and the development of antimalarial drugs, insecticides, and repellants ' Prior to the outbreak of hostilities in horea in 1950, malaria in that country had attracted relatively little attention. One of the most important medical problems encountered during military activities on the horean peninsula, however, was the high incidence of vivax ma laria Since 1950 much information has been obtained concerning the natural history of this disease in man and its response to antimalarial drugs Hankey and associates' in 1953 reported the relapse pattern in naturally acquired horean malana as it appeared in over 1,500 returning American military personnel Many narts of the United States are known to have suitable mosquito vectors for the transmission of malaria, should the carrier state in infected persons allow transmission Last year, Burnetti' re ported an outbreak of horean malaria in California involving 34 Camp Fire Girls who were infected by a carrier who had returned from horea To determine the nature of this disease more accu rately. Arnold and associates at the Army Malaria Research Unit at the University of Chicago recently studied six human volum teers who were mosquito-inoculated with the St Elizabeth strain of horean vivax malaria Four of these heavily infected subjects, in whom the exact date of infection was known, were followed beyond the apparent spontaneous termination of the disease Ob servation of these patients confirmed the impression gathered from studies in the field that horean malaria is similar in its natural history to other temperate zone malarias and terminates spontaneously before 18 months' time. In the four patients fol lowed up to 18 months beyond this terminal period, no evidence of continuing activity was found. About 3 years after initial in

fection moreover transmission of the disease was not accomplished by direct blood transfusion into nonimmune volunteers

Chlorogume phosphate and related drugs effective against the erythrocytic phase of the disease do not affect the tissue phases of vivax malaria, Chloroquine by virtue of its relatively long persistence in the body will abort one or two attacks following the initial paroxysm after this interval the previous periodicity reappears By contrast, primaquine is effective solely against the tissue phase of the plasmodia Chloroquine used in combina tion with primaquine in adequate dosage therefore can now prevent relapses in practically all cases. Because of its relatively low virulence the St Elizabeth strain of P vivax (causing horean malaria) is readily controlled by antimalarial drugs Clini cal symptoms are easily masked however by the usual suppres sive therapy In addition the relatively benign character of this disease tends to promote its chronicity This also accounts for the clinical attacks which may occur after a prolonged quiescent interval following the cessation of suppressive therapy A recent detailed study by Hall reports a statistical analysis of 95 pa tients having horean vivax malaria and reviews problems met in the diagnosis and treatment of this disease

STRBIARY

A case of vivax malaria is reported in a returned horean veter an This patient first showed clinical symptoms over 15 months following probable exposure and 7 months after cessation of chloroquine suppressive therapy. In this respect he was similar to other cases of so-called benign tertian malaria seen sporad ically in those returning from military service in korea. That such cases are infrequently met in the general population is at tested by the fact that this was the only case of Korean malaria admitted to this large general hospital during the past 5 years A high index of suspicion for malaria is warranted in returned veterans with febrile illness in order to establish correct diagnoses

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Foreign Body in the Urinary Tract

EARL C LOWRY Colonel MC USA JOSEPH N LIONTI Majo MC USA

REIGN bodies get into the urinary tract by one of three methods (1) Through the urethra to the bladder and thence to the ureter and kidney (2) by way of the gastrointestinal tract with erosion through the intestinal wall and (3) by external violence

Those foreign bodies entering through the urcthra are numerous and the great majority of cases are not reported. They may occur in children, in mental patients, during erotogenic acts and possibly secondary to instrumentation or an operative procedure. Insertion of a foreign body into the urcthra or bladder is common place however, for the patient to pass it into the urcter is unusual. We are therefore reporting a case in which the patient passed a thermometer into the left urcter. There are reports of a cut hair and seed bearing stray ascending the urcter, the latter as far as the renal pelvis. Common objects removed from the bladder and/or urcthra are mails, rods bobby pins hairpins, safety pins, stray toothpick, pencil, toothbrush handle, candle, rubber or leather tubing, and thermometers. Less commonly one may see needles, nail files, glass or plastic vals, and seeds. Lyen snakes, earth orms, and a watch chain have open reported.

I oreign bodies entering through the gastrointestinal tract arrive in the gentlournary tract in one of three ways. 5tiffor sharp objects will not prise easily through the curvatures of the second portion of the duodenum hence, they perforte and may enter the right kidney. One of us (ECI) has seen a bobby pin do this and, in another patient, a toothpicl perforte at that point and form an intrapertioneal abseess without entering the kidney. A second group of objects penetrates the gut in the region of the right colon near the hepatic flexure and from three may creatly reach the lidney Gondos' mentioned to o such cases. The third group of foreign bodies penetrates the left colon and reaches the kidney or ureter on that side. Fish bones seem to penetrate more often in this manner.

l oreign bodies resulting from external violence are seen most commonly in war casualties. Cases reported consist of buildes and mine or shell fragments. We have seen fragments of clothing,

Frm Litte man Army Il pal Sa Fran i Calif

debris and in one instance a button enter the renal pelvis in a war wound in several instances bone fragments from extensive wounds have been found in the bladder



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CASE REPORT

A 1d year old girl with th mental age of about 8 years was ex med at thi no pral on 26 January 1955. She gar a histo y of the epi sod s of severe urinary tract infection during the p st year associated with pyur fever nd left abdom nal p n In spite of conti ued ther py the pyuria persisted Physical examination was essentially normal Utinalysis revealed large numbers of white blood cells and some red blood cells Intra venous pyelography revealed a rectal thermometer in the bladder extending into the region of the lower left ureter. The right kidney and ureter were of normal function and architecture. There was no evidence of left renal function in 30 minutes as manifested by intravenous pyelography (fig. 1). On vaginal examination the tip of the thermometer could be easily felt in the left vaginal vault.



Figure 2 Intravenous pyelogram 15 ms utes taken 10 days after removal of thermometer showing return of function of left kidney

On the following day under general anesthesia cystoscopic examination revealed the thermometer lying obliquely in the bladder with one end entering the left wreteral orifice and the other end pressed tightly against the right lateral bladder wall. At least one half of the thermometer extended into the wreter. The thermometer was removed by pulling the distal end into the wrethra and the pressure exerted.

that it was due to the con t nt rice det He had ot noticed blood in hi stools He was rep triated in September 1953 and with the ew dit his bow I mo ed once a day and his weight increas d to 145 nou d



a 1) Port fop t p me flag boultudd dwth plyp Th tre lag boulp td

Six m th pi to dm ssin h begin to have two to thre norm l movements per day and noticed a grad al we ght loss to 130 pound At that tim he recei ed I tter from his br th phys ci who r com mended that h be ex m ned f r po ible polyp sis coli because hi b ther h d recently undergone a bowel resection for this c indition

The past hi tory and social hi tory were neg t v. The f mily h story reve led that he mother de d at 43 ye is of ge of carc nom of th I rge bow I s ster 33 had an ileostomy f ll wig bowel resect on frm Itipl polyposs and a bothe 23 has had the ame Of three ther s bl ngs one showed n rmal findings at examinati n the second f sed ex m n t on d the p tient h d no k owl dge of the cond ti n of the thid His 3 v a old on w s symptomatic and w snot ex mid

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R s It f a complete bl od count a ur naly s and erologic test were n mal Examin tion of st 1 pecimens were egati for ov nd p rasit s The roentgenogt m f the che t was negativ A bari m enema revealed numerous polyps throughout the entire length of the colon. A sigmoidoscope was passed to 23 cm. and 60 to 80 small polyps were visible throughout the large bowel. On 18 February under general anesthesia a total colectom, and resection of the distal ileum was performed. Eleven centimeters of rectum was left and an end to end ileoproctostomy was performed using two layers of sutures.

Upon opening the specimen the entire colon was studded with polyps so numerous that in some areas they tended to merge. There was no evidence of malignancy in the specimen submitted and there were no polyps in the ileum.

Postoperatively the patient did very well with adequate maintenance of fluid balance and a minimal amount of abdominal distention. Three days postoperatively he had a liquid bowel movement with some blood but this was not alarming. The Miller Abbott tube was removed on the fourth postoperative day and he began to have as many as seven soft semisolid bowel movements a day. Three weeks later he was having three formed bowel movements at night and four during the day and had begun to show some gain in weight.

Four weeks after operation a sigmoidoscope was passed for the first time and at the 11 cm mark the suture line was found intact. Ten polyps distal to the suture line in the rectum were fulgurated. One week later 15 more polyps were fulgurated After a 2 week period all the remaining polyps were fulgurated leaving a normal appearing mucous membrane and he was discharged from the hospital. Following each of these fulgurations there was some diarrhea but it rapidly subsided. The patient was instructed to return at 3 to 6-month intervals for follow up sig roidoscopic examination at which time any polyps that may have developed will be biopsied and fulgurated. If any malignancy is found it will be a simple matter to remove the 11 cm of rectum from below

The patient is well satisfied with this procedure especially because be has a brother and sister with ileostomies and can compare his condition with theirs

ETIOLOGY

It is now a widely accepted fact that familial polyposis is due to a genetic change in a normal, growing cell Once the mutation has occurred the trait is transmitted by either sex from one generation to the next as a mendelian dominant. When one ancestor has this dominant characteristic it is then transmitted down the family tree with every generation affected. McCarty has further proved that the entity occurs in all national groups and that there is no racial predisposition.

SEN AGE AND INCIDENCE

In a series of 93 patients published by Mayo and associate no definite sex predominance was noted nor has there 31/6/1

dence of a sex linked characteristic. In true familial polyposis the fact that the disease is hereditary but not congenital is evi dent in that the symptoms are rarely seen before puberty and the polyps are not found until puberty In 1952 Schaffer re viewed the literature and found that up until 1928 Hullsiek had found 198 cases of polyposis coli with a proved familial history In addition Schaffer was able to find a total of 107 cases after 1928 including four of his own. This makes a total of 235 cases of proved familial polyposis coli up to 1959 This gives one the impression that the entity is a rare one However we do not believe that this is true but rather that there are many cases that have not been published because the would be author has thought that the lesion is an all too common entity We do not believe that fa milial polyposis coli is a rarity but a rather uncommon lesion and that more cases would be found if a more adequate family history were taken in every case of adenomatous polyps of the large bowel The average age of onset in Schaffer's patients was 28 9 years and 39 percent of his patients had carcinoma of the large bowel by the time the disease was discovered

SYMPTOMS AND DIAGNOSIS

The onset of the disease is insidious often rectal bleeding is regarded by the patient as evidence of homorrhoids and no further thought is given to the matter until symptoms of malignant change appear Early there is crampy abdominal pain with occasional looseness of bowel movements due probably to hyper secretion and hypermobility. Shortly thereafter mucus and blood are seen The stools classically have blood over the surface rather than mixed throughout This is supposedly a classical sign but because one frequently must question the reliability and credibility of the patient little value can be olaced upon it

The presumptive diagnosis is based upon the history and rectal examination. The latter will frequently disclose the rectal mass os. Confirmitory diagnosis is based upon proctosigmoidoscopic examination and barium enema.

TREATMENT

The treatment of multiple polyposis recommended in this article is total collectomy including about 5 cm of ileum followed by an ileoproctostomy. This procedure is done in one stage following bowel preparation with 0.5 gram of sulfaquanidine 4 times a day for 5 days and 1 gram of neomycin sulfate every 4 to 6 hours for 2 days prior to operation. After 1 month all of the polyps in the remaining rectal area are fulgurated the patient is followed at 3 to 6 month intervals by proctoscopic examination and further fulguration is done as indicated. This procedure is far superior to ileostomy with its many inherent difficulties and to pull

through procedures If the remaining large bowel becomes over run with polyps, large areas of the mucosa can be excised without difficulty Not only must the patient be treated and followed ade quately but all members of his family should be thoroughly ex amined, treated if necessary, and followed for the rest of their lives

Many advocate a Miles' operation and ileostomy, either abdominal or the perineal type, so-called pull through procedure. We consider this a rather radical procedure unless demanded by the condition of the distal rectum. There are only two clear-cut indications for such a procedure (1) evidence of malignancy in the rectosigmoid area, and (2) total involvement of the remaining rectal mucosa by polyps. To further elaborate on the latter in dication if there is no normal mucosa between the polyps, the rectosigmoid area should be removed with the balance of the large bowel, and an ileostomy performed.

With an ileoproctostomy the portion of intestine remaining is able to compensate, and electrolyte and fluid balance is main tained With an ileostomy, this is achieved with difficulty and, in addition, the caustic effect of small bowel contents upon the skin is well known Therefore, an ileoproctostomy with preser vation of the lower rectum and sphincter is preferred to an ileostomy

PROGNOSIS

It is a well substantiated fact that adenomata of the large bowel predispose to carcinoma Martini* stated that any patient who has polyps of the colon or rectum would probably develop car cinoma in 10 years, if he lived The incidence of carcinoma in multiple polyposis statistically varies between 34 6 percent, as reported by Hullsiek and 82 8 percent, as reported by Bargen is Estesi* stated that the potential incidence of cancer following multiple polyposis should be considered 100 percent "Bernstein' stated that from the accumulated evidence it is quite certain, therefore, that the burden of proof is upon anyone who wishes to prove that colonic or rectal polypi will not, if left untreated, undergo malignant degeneration "

In treated patients, following ileoproctostomy, regularity of bowel habit is quickly re established in 6 to 12 months following dietary restrictions, the patients are usually able to tolerate a full diet, so that within 1 year they are able to live a full life

Statistically, we have little to state concerning the follow up of familial polyposis after operation, because so few cases have been reported it has only been in the past 5 to 10 years that the dangers of large bowel surgery have been controlled This is largely due to the development of antibiotics Adequate follow up

of the patients who have been operated on in the past 5 to 10 years should reveal what the results of such treatment will be However it is believed that complete removal of the colon peri odic follow up of the remaining distal rectum and fulguration of any polyps that may develop offer a safe procedure which is far more satisfactory to the patient than an ileostomy Adequate removal is considered to be that which leaves no more than 12 cm of rectum because of the technical difficulty in observing and treating lesions higher than this

At the risk of repetition it again must be emphasized that the nationt and his family are never free from periodic observation If the patient co-operates with his physician there is no reason why he may not attain a full life span and remain symptom free and comfortable

SUMMARY

Polyposis of the large intestine may be classified either as adult (acquired) or as adolescent (congenital disseminated) types Two cases presented herein illustrate the latter heredo familial entity as they occur in patients with typical positive family histories From a review of the literature it appears that familial polyposis coli is uncommon although not rare and more cases would be found if a more adequate family history were taken in every case of adenomatous polyps of the large bowel

The treatment recommended for benign polyposis is total colectomy including about 5 cm of ileum followed by ileoproc tostomy The patient is then re examined at regular intervals for the rest of his life at which times new polyps if they occur are fulgurated This procedure is more satisfactory to the patient than the more radical abdominoperineal resection and ileostomy

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THE PATIENTS EXPECTATIONS

The average patient appears to expect one of four things from his doctor (1) some form of medicine (2) advice or guidance in connection with a particular action or event going on at the time he is attending (3) support (usually against some member of the family) in some particular action or (4) a letter to see a specialist. In addition all want to be told what is the matter and of course to be reassured that the condition is not serious

Yet at the end of the first consultation most are content to go away without any of these things if they have an appointment to come again Despite the usual cry The patient expects a bottle of medicine. I have found that if he is given ample time and the opportunity to talk fully and is thoroughly examined before being fold it is necessary to seek the cause of his symptoms by means of further inter views he is happy to accept this and there is seldom any later demand for medicine Similarly though it is said that the public has become "hospital conscious or specialist minded I find that most patients who ask for a letter to see a specialist will agree to attend for further discussion of their troubles once they have been encouraged to talk freely

⁻PHILIP HOPKINS M R C.S L R C.P 10 M d cal Wold pp 20-21 July 1955

Traumatic Aneurysm of the Thoracic Aorta

PAUL F WARE C ptd MC USAR RICHARD H ADLER C pt MC USA CLINTON'S LYTER C l l MC USA

RECENTLY traumatic theracic actic aneurysm or rupture has been diagnosed more frequently during life. The increasing speed and accident rate with modern transportation undoubtedly accounts for the rising prevalence of traumatic thoracic injuries. Scattered case reports now appearing in the literature raise many pertinent points regarding their pathogenesis diagnosis and treatment. Therefore a complete understanding of the pathogenesis of such injuries is essential for an accurate diagnosis during life in order to permit definitive treatment.

PATHOGENESIS

Aortic trauma may be due to either penetrating or nonpene trating injury Nonpenetrating injury is caused usually by blunt trauma such as steering wheel or other crush injuries. The aorta is readily susceptible to the peculiar effects of rapid deceler ation alone Closed chest trauma involving sudden deceleration as in car or jeep accidents parachute jumps falls from a height and airplane crashes accounts for the great majority of thoracic aortic injuries Hass reported on the pathologic changes found in victims of aircraft accidents and emphasized the stresses placed on unevenly decelerating body organs. The aorta acts like a solid viscus because of its column of blood and tends to decelerate slowly In addition the rate of deceleration is retarded at certain anatomic points because the transverse aortic arch is relatively mobile and hangs suspended in the thorax from the great vessels. The acrtic arch is comparatively anchored at its left ventricular origin and at its junction with the descending aorta near the insertion of the ligamentum arteriosum. The de scending acrta is fixed to a lesser extent by the intercostal arteries In Strassman s' series of 7º cases of traumatic aortic rupture the sites of rupture in order of frequency were the first portion of the descending aorta the proximal aorta just above the aortic cusps and the descending aorta between the isthmus and the diaphragmatic hiatus Closed chest trauma from most causes basically involves unequal deceleration subjecting the acrta to stretching torsion and tearing especially at the rela tively fixed points

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The type of aortic injury resulting from such forces is variable If the stress imposed is very severe the mobile acrtic isthmus may be torn completely apart at either end with sudden, fatal hemorrhage A linear tear of the intima may heal spontaneously, give rise to a dissecting aneurysm, or progress to further rupture of the media and form a false aneurysmal sac A force sufficient to tear both intima and media may lead to progressive dissection and stretching of the adventitual laver with formation of a false aneurysm The torn intima and media may retract a considerable distance leaving a false fibrous aortic wall or sac as the lesion stabilizes The laceration is usually transverse and occurs most commonly near the ligamentum arteriosum. If an aneurysm is formed, it is usually posterolateral in position and grossly re sembles a saccular type of aneurysm This appearance, however. is deceptive and there are certain fundamental differences be tween a traumatic aneurysm and a classical syphilitic saccular aneurysm which have a practical bearing on surgical treatment Fractures of the bony thorax, injuries of the heart, lung, and extrathoracic organs may be associated with the aortic lesion

CLINICAL COURSE

The clinical course of a patient with aortic trauma may pursue one of several pathways Immediate death from hemorrhage may occur from complete laceration while partial laceration may result in a localized unsuspected aneurysm discovered on routine chest examination Partial laceration results in variable degrees of localization of the extravasating blood Temporary localization, by a thin adventitial layer the lung, or mediastinal structures, may occur with oxsanguinating hemorrhage hours or days later, or the extravasated blood may become firmly localized forming a false aneurysm This latter group of patients must be diagnosed accurately to prevent a fatal outcome

DIAGNOSIS

Diagnosis is relatively simple if clinical suspicion is high. The patient presenting a history of thoracic trauma requires care ful observation both clinically and radiologically. Serial roometic genograms may reveal progressive mediastinal widening, in creased aortic density or "lavering" due to adventital dissection or an irregular mediastinal shadow due to extravasating blood. There may also be associated lung injury with the findings of hemopheumothorax.

PHYSIOLOGIC CONSIDERATIONS

The period of aortic occlusion tolerated by human patients without neurologic damage is variable and depends on individual collateral circulation Patients with coarctation of the aorta usually possess excellent collateral circulation and safely toler

ate aortic occlusion for long periods. Even these patients how eyer may not have the aorta occluded with impunity if critical collaterals are sacrificed. The patients reported by Beattie and co-workers and Bing and associates suffered paralysis after the subclavian artery was turned down into the aorta below the area of coarctation

Two methods used singly or in combination are available to protect the heart and distal organs from the untoward effects of acrtic cross clamping (1) an artificial collateral circulation supplied by a shunt and (2) hypothermia to reduce the workload of the heart and diminish the tissue oxygen requirements

A practical external shunt was devised by Clatworthy and Varco in 1950 Blood was shunted around an occluded aortic area through a siliconized polyethylene tube This shunt pre vented the mechanical shock observed in dogs undergoing nortic cross clamping without such protection Schafer and associ used this method in both dogs and humans to replace resected aortic segments with a new graft Izant and associ ates used double flanged stainless steel tubes connected as an external shunt Stranahan and associates shunted blood through Tygon tubing with siliconized glass joints Mahorner and Spencer used the graft which is to replace the excised nortic segment as the shunt itself

Numerous studies of the physiologic effects of aortic cross clamping have been carried out Page demonstrated that col lateral circulation prevents proximal hypertension when the acrtic arch is first partially then completely constricted Van Harreveld and associates in 1949 demonstrated in experiments that sudden complete aortic occlusion just above the renal artery is without effect whereas compression above the celiac axis or above the diaphragm causes an immediate rise in arterial pressure as does occlusion of still more central acrtic regions Reduction of the thoracic acrtic lumon of over 45 percent is required before arterial pressures in the aorta or femoral artery are affected The studies of flubay and associates emphasize the importance of the shunt lumen approximating the cross sectional areas of the bypassed vessel to minimize the physi ologic alterations Other studies revealed that small lon, or multiple shunts offering increased resistance may not serve as adequate collateral channels Schafer and co-workers using multiple polyethylene shunts found partial occlusion of the inferior vens cava also necessary to prevent overloading the left ventricle

The basic physiologic studies of hypothermia initiated by Bi-clow and associates have focused attention on the use of body cooling to minimize the problems associated with acrtic

cross clamping Owen and co-workers¹¹ recently concluded from a series of 16 hypothermic (23 to 26 C) dogs that thoracic aortic cross clamping for periods up to 2 hours during hypothermia was safe Pontius and associates,¹² in cross clamping the aorta, found only a slight reduction in over all mortality in hypothermic dogs but demonstrated no evidence of paraplegia in them, while 65 percent of the control normal thermic animals doveloped paraplegia. Their study suggests that hypothermia may avoid ischemic changes below the area of aortic occlusion, but offers little or no protection against the immediate cardio-dynamic effects.

CASE REPORT

The patient a 19 year old soldier was transferred to this hospital on 19 November 1954 with a referring diagnosis of traumatic aneutysm of the thoracic aorta. He had been involved in an automobile accident on 12 September and had been hospitalized elsewhere because of multiple rib fractures on the left associated with a left hemopneumothorax which had been managed satisfactorily by aspirations. He was distanged after 3 weeks but because of dyspine a on mild exertion easy fatigue palpitation and occasional aching on the left side of the chest he was unable to perform duty and was transferred to this hospital for evaluation.

The patient was tall and thin and in no acute distress. All peripheral pulses and blood pressures were normal. A grade II systolic murmur was heard on both sides of the spine posteriorly, but was more marked on the left. Electrocardiographic findings were within normal limits. A roentgenogram and fluoroscopy revealed a pulsatile paramediastinal mass. lying posterolaterally in the left side of the chest in intimate relation with the proximal descending aorta. An angiocardiogram did not reveal any contrast material entering the mass.

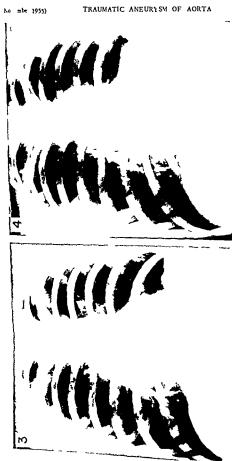
The development of the aortic aneurysm can be followed by review of the roentgenograms made during the initial 2 week posttraumatic period (figs 1 4) On serial roentgenograms the aneurysm appeared slightly larger (fig 5)

The use of hypothermia and an external aortic shunt were believed to offer maximal protection during the contemplated period of aortic cross clamping. Accordingly on 29 December anesthesia was induced and under hypothermia the aneurysm was excised and replaced by a homologous aortic graft. The patient's temperature was maintained between 80 and 82 F throughout the operative procedure by an under lying cold water rubber mattress after hypothermia was induced by immersion in an ice tub Adequate exposure was obtained through the bed of the left fourth rib with shingling of the third fifth and sixth ribs. The aneurysmal mass was found to arise about 15 cm distal to the left subclavian utters and presented in a posterolateral position. There was tremendous fibrotic reaction about the aneurysm the left

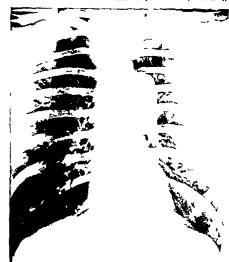


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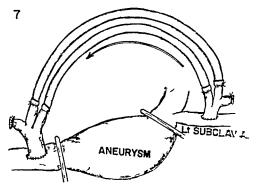
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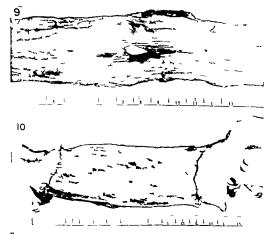
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At autopsy the esophageal perforation causing an extensive mediastinitis and pleuritis was confirmed (fig. 9). The aortic graft and suture lines (fig. 10) were intact except for one small area of leakage in the proximal suture line presumably the result of the surrounding infection. Postmortem findings otherwise were not remarkable.

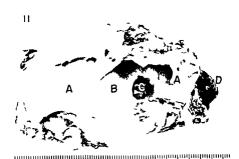


F gure 9 Postmortem m cosal view of esophageat perforat on F gure 10 Post mortem photograph of the homologous acrise graft bridg ng normal acrise wall

PATHOLOGY

Few traumatic thoracic aortic aneurysms have been studied carefully pathologically after surgical resection External ex amination of such an aneurysm at operation may be misleading Study of an open resected specimen, including sac and involved aorta, provides a more complete understanding of the besic under lying lesion A traumatic aortic aneurysm, unlike its syphilitic counterpart is not a sharply localized pathologic defect. The lacerated intima and media retract as much as several centimeters with disruption of elastic fibers leaving a defect bridged only by fibrous tissue

The fundamental features of traumatic aortic aneurysm are illustrated in figures 11 through 15. These findings have also been demonstrated by Stryker. 24.

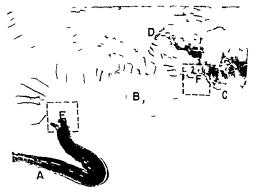


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ft umatic aortic neurysm look g dir tly int newy mal a F gw 1 T ng tsal w f gro f ls (A) Normal ortic wall (B) F br us tis we do td ort (C) F br us ts we rent (D) F Is and lam nat d I t

DISCUSSION

More patients receiving severe closed chest trauma associated with sudden deceleration are being seen and with vigorous treat-



F gure 13 Sag ttal section thro h ornal acric wall fire = = ing nto fal sac (See legend for fg 1. for xplan = = (C) The end of normal acric walls is be done shall satisfy the feet of fitness issue def ct and lamini dela boeff's elastic issue to)

ment are surviving and presenting problements such an aneurism of discourchest roentgenograms may perhaps there are no untoward signs of progressions.

The immediate promosis for the prinquired theracic actic ancurves it serving the first 24 hours Indeed, in traumitie theracic actic rupture 83 powithin 1 hour and all died within prittent lived 10 days Rice is surined 20 days but the patient reposate of the first few hours are exploratory theracotomy should be attended in the first few hours are exploratory theracotomy should be attended in the first few hours are exploratory theracotomy should be attended in the first few hours are exploratory theracotomy should be attended in the first few hours are indicated by the reports of I and Greet 2.

A third group of patients surviva ated injuries and weeks to mo except for a localized thoracic i hod i hotor tal nerta

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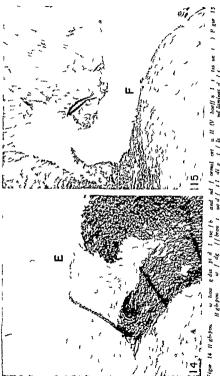
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posttraumatic aneurysm as identical with a true saccular small necked aneurvem of syphilitic origin is appealing Clamping of the base of the sac, with excision of the main aneury smal mass and suture closure does not require interruption of aortic blood flow This approach, successful to date, in a posttraumatic aortic aneurysm, has been reported by Bahnson' A similar approach was unsuccessful in the case reported by Govette and associ ates, and recurrence of an aneurysm 6 months following a similar procedure has been reported by Cooley and DeBakey 10 Path ologically, however, as we have seen, there is usually actual rupture and pulling apart of the intima and media with retraction of the layers for a distance of several centimeters. This gap, devoid of elastic fibers, is bridged only by fibrous tissue. These features, peculiar to a posttraumatic aneurysm, may not be ap preciated at the time of operation Clamping, excision, and re suturing through such fibrous tissue would seem to preclude a long term satisfactory result in a high pressure, vascular channel such as the thoracic aorta Rather, a definitive procedure in volving resection to normal acrta with grafting seems preferable

Hypothermia with a protecting shunt seems indicated to avoid the inherent hazards of actic occlusion in these pritents. The hypothermia need not be extreme, but may be maintained between 80 and 84. F to minimize myocardial irritability and a potentially difficult resuscitation if ventricular fibrillation should ensue

The ribs should be spread open slowly to avoid terring the posterior aspect of the aneurysm where its limiting tissues may be thin and friable The aneuryom per se should be left alone to avoid troublesome oozing and alveolar leaks from the intimate ly adherent lung Softened areas in the aneurysm may actually be buttressed by lung parenchyma, and dissection may lead to potentially uncontrollable hemorrhage Therefore, the aorta is first exposed proximal to the origin of the aneurysm The pre vious mediastinal and pleural bleeding leaves a residual fibrosis rendering all dissection hazardous until one has achieved satis factory control of the aorta above and below the aneurysm An external shunt to bypass the aneurysm is readily established without even momentary interruption of aortic blood flow A heter ologous arterial sleeve is sutured in position in the distal norta and also in the subclavian artery A siliconized, polyethylene, flanged tube may be simply tied into these arterial cuffs The arternal sleeves have the advantage of mobility and permit the shunt to be moved out of the operative field Ideally, the size of the shunt under normethermic conditions should approximate the estimated cross sectional area of the thoracic aorta Prac tically from the studies of Gupta and Wiggers, it would seem that a shunt half this size would be adequate. The decreased

cardiac output and lowered oxygen requirements of tissue cells under hypotherma add a further margin of safety. The size of lumen of the shunt used in our patient was critical and undoubtedly hypotherma contributed to the safe acric occlusion of over 3 hours duration.

Once the shunt is functioning satisfactorily the aorta may be cross clamped with impunity. The entire aneurysm should now be removed to avoid late slough and abscess formation as reported by Lam and Aram The surgical error in our patient resulted from mability to find any cleavage plane between the medial wall of the aneurysm and certain mediastinal structures Indeed too extensive a dissection may lead to impairment of the esophageal blood supply or injure the esophagus and other con tiguous structures A safer approach would be to open the an eurysm lon_itudinally on its lateral aspect and with a finger in the lumen excise the intima and media on its medial aspect under direct vision leaving the adherent adventitia and mediastinal tissue reaction intact over vital mediastinal structures Thus potential injury to the esophagus left main bronchus pulmonary artery inferior pulmonary vein and left auricular wall would be minimized An indwellin, gastric tube would be an additional precautionary measure

The traumatized acrta with its accompanying aneurysm is excised to grossly normal nortic wall proximally and distally The intervening defect may be bridged by a freeze dried aortic graft or a suitably fashioned prosthesis of one of the newer nylon type synthetic fabrics After completion of the anastomosis and restoration of acrtic blood flow the distal acrta is resultired and the subclavian artery may be reconstituted or ligated and transfixed \n additional point perhaps related to hypothermic anesthesia deserves mention. Due to our present interest in fibrinolysis in thoracic surgical patients routine investi_ative blood specimens were drawn for fibrinogen levels. Intense fi brinolytic activity was noted when the patient was placed in the ice water tub and again later when blood replacement fell behind momentarily The fibrinolytic activity spontaneously subsided in each instance but excessive fibrinolysis should be considered if unusual occurs because intravenous fibring en fraction may restore a normal clotting mechanism

SUMMARY

The incidence of traumatic thoracic aortic aneury sm is increasing. The lesion may be caused by closed chest trauma and rapid body deceleration. Early accurate diagnosis is essential to per mit definitive treatment.

The reported case illustrates the development of the lesion radiographically. The basic puthologic changes are documented

and their relation to the choice of surgical therapy discussed Complete resection of the aneurysm to normal aorta would seem to ensure the best long term result

In the light of present knowledge, resection of a traumatic aneurysm requires an external shunt and hypothermia to afford maximum protection against deleterious cardiodynamic effects and distal ischemic changes during aortic occlusion

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cardiac output and lowered oxygen requirements of tissue cells under hypothermia and a further margin of safety. The size of lumen of the shunt used in our patient was critical and undoubtedly, hypothermia contributed to the safe aortic occlusion of over 3 hours duration.

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A MESSAGE FROM THE A M A

This is the second part of a report on the results of a continuing opinion survey of physicians released from active military service. The first part appeared in the October issue of the Armed Forces Medical Journal. The summary covers the reporting period from 1 July to 31 December 1954, during which time the Council on National Defense of the American Medical Association distributed 2,373 questionnaires. A total of 1500 forms were completed and returned for tabulation

Training received while in service Approximately two thirds of the 1500 responding physicians replied to this question. There were 412 in the Army, 276 in the Navy, and 251 in the Air Force who reported that they received additional training or experience in service schools. The Medical Field Service School accounted for the largest number while the School of Aviation Medicine and the Amphibious Forces Training School were next in order of attendance.

Evaluation of military medical training. A big majority of the responding physicians felt that all important features of military medical training had been satisfactority covered. Satisfactory responses were 83 6 percent for the Air Force, 77 percent for the Army and 70 6 percent for the Navy Insufficient training in military customs and regulations accounted for the largest number in the Army who were not satisfied with the training programs while for the Navy and Air Force it was insufficient training in base orientation and indoctrination

Physicians evaluation of assignment. A large majority of the physicians indicated they were properly assigned. A less desiries majority in the Army and Air Force responded favorably to the question as to whether they were properly rotated. For the Air Force 82.7 percent indicated a proper assignment and 77.3 percent were satisfied with their assignment. For the Army 77.1 percent indicated proper assignment and 73.6 percent were satisfied, while in the Navy 66.7 percent indicated a proper assignment and 68.4 percent were satisfied.

Physicians evaluation of staffing conditions This multipleanswer question requested an opinion as to staffing conditions of nurses enlisted medical personnel dentists, physicians and

1692

others at the installation where service was performed by the responding physician For all three branches of service the largest number of responses indicated adequate staffing By services 389 Army responses indicated overstaffing 434 under staffing and 1 136 adequate staffing Among the Navy replies 570 indicated overstaffing 466 understaffing and 1 334 adequate staffing In the Air Force 284 indicated overstaffing 413 under staffing and 684 adequate staffing By groups physician over staffing was greater in the Army and Navy while in the Air Force physicians were on a par with dentists. The largest understaffed group in the Army and Air Force was nurses. In the Navy dentists led nurses by a small percent in understaffing

Medical duties performed by others A total of 1 380 physicians answered this question. The replies showed that 46.1 percent thought that their duties could not have been performed adequate ly by other personnel while 53 9 percent felt their duties could have been adequately performed by other personnel. More than 50 percent of the physicians who indicated a possible transfer of their duties to others considered that civilian physicians could adequately provide the medical services

Types of patients treated One of the questions was designed to determine the percentage of time devoted by physicians to military personnel dependents of military personnel administra tive duties et cetera both at domestic and overseas stations Approximately 50 percent of the responding physicians said they devoted one half or more of their time to military personnel both at domestic and overseas stations. One half or more of the time allotted to dependents of military personnel at domestic stations was indicated by 98 9 percent of the replying physicians and at overseas stations by 34 8 percent

Types of nonmilitary medical care. The type of medical care most frequently performed by medical officers for nonmilitary persons was outpatient care For the Army other specialty services was second in order of frequency with surgery third For the Navy and Air Force obstetrics and gynecology was second with other specialty services third in order for the Navy and pediatrics third for the Air Force

Physicians who would voluntarily remain in service sponse to the question relative to military service beyond the obligated tour of duty 373 physicians indicated they would not be willing to stay in military service for more than their obligated period under any circumstances A total of 816 physicians indicated they would serve an additional period under certain conditions

PROMOTIONS OF OFFICERS

The following officers of the military medical services on active duty in the Army, Navy, and Air Force have recently received permanent promotions to the rank indicated

Medical Corps

How d G Abb tt Capt USA Fe M Adams Capt USA E IAd a Capt USA R ym nd H Bish p Jr Capt USA R b t J Bradl y Maj USA Jame L B Capt USA Clad M C pp Capt USA D dS Cooper Capt USA Etis G C p Capt USA Dana D Cox Capt USA StphnW Czrck Capt USA M chalR Fr Il Capt USA J me P G g Capt USA Ea 1 S G rd Capt USA Alphons C. G m Capt USA E rl W Gorby Capt USA Hom H H na Capt USA

Rb tF Hor ma Maj USA Will mill ffurs Capt USA Edw rd S ko w nski Capt USA Arla P La Capt USA Lloyd B McCabe Capt USA Egne P McK ow Capt USA St phe Mourat W j USA R bert W h dl g r Capt USA Fra cis W P drotty j Capt USA Jm W Rans Cpt USA J b W Schult Capt USA P IES b t Capt USA G g M St w t Capt USA Jm AS k Capt USA PulA Thema J Capt USA Robert C W r Capt USA

Dental Corps

Geoge Gell Jr Capt USA Cla enc W Gill ger C l USAF Chals M H Capt USA Robe t J M Hard C pt USA Rym nd H O t th ltz Capt USA Thod : JP : C 1 USA WII mMR m Lt Col USA

Jh F Schmit Capt USA F d Schied Capt USA D nald E Schwitz Capt USA Chal F S m r Capt USA
Georg I U ha Capt USA
Ros W W Capt USA Hall Wr t Capt USA

Veterinary Corps

Wills I Ath y Capt USA Charl M Ba C pt USAF Charl N B Capt USAF Mit A B rw kl Capt USA Joh H B as Capt USA Rodney S B II tt Capt USA k the Borns Maj USA I land B Cat Capt USA the R Coop t Jt Cap USA With T C II Lt C I USA R b rt A Crand Il Capt USAF Frak J D M i USA Hald M D Maj USA Fi M Gatee Capt USA William W R Capt USA
Fi M Gatee Capt USA J me U Sh! I t L USAF
William S Goch ut Jt Mai USA Howard B Sld J Cap USA

Thm P Griff Capt USAF William V H w II Capt USAF Donald C H k Capt USAF K y W L r tz Capt USA
St watt J M C 11 Capt USA
Murlin L McG w Capt USAF R bert R M II C I USAF Ma M N ld Capt USAF
The G Nurma J Cap USA
Ge C Philp Cap USAF Glbet L Rauls Capt USA William E Rly Capt USA Chal E R b ns C 1 USAF

Veterinary Corps-Continued

1 me BY a Cap USA

Jh L Trry J Cap USAF R be JY g Cap USAF Fra L Thoma Cap USA N 10 W bs C I USA

Medical Service Corps

B mad A bel C I USA Rulus D Hull Col USA Rures D Huri Col USA
Hury A Hage J I L USAF
Rus III J kns I L USA
As B J has I L USA
E O J Cap USA
L K k b II Cap USAF PIVK mg L C I USAF Er T Kr bm L C I USAF Cal G Laut be h Cap USA Haland W Ly C I USA Bram G L b I L USA

H ma 1 L ! Car USAF Staly J T d kpf C 1 USA
Edw do S T bag J 1 L USA
V M T Hame J 1 L USA
H nry M Toolf Cap USAF
L J T gh Maj USA
L nad P Z g low C 1 USAF
B lly B Z II Cap USAF Tlian M Z lime J I L USA

Nurse Corps

Erl T Aycock 1 th USA
Jame C Bes 1 tht USA
Berly E B chman 1st ht USA
Margue t C. Casey 1 th USA
D can M Chr tens 1st ht USA
B tty L. Da is 1st ht USA
R tty L. Da is 1st ht USA
R mome E D 1 cey 1 th USA
Mary E Doyl 1st ht USA
Miry E Doyl 1st ht USA
Miry E Doyl 1st ht USA
Miry B Opt 1 th USA
Miry B Opt 1 th USA
Dorothy M Holt 1 th USA
Rosemary H ud k 1 th USA
W oda M king 1st ht USA
W oda M king 1st ht USA
D thy M K h 1st ht USA

B than E L e Ist Lt USA
Sara N L ady I the USA
Alberts F Mansey I the USA
Alberts F Mansey I the USAF
Barry F McL I stit USA
Las May L Rodgers I the USA
May L Rodgers I the USA
May L Rodgers I the USA
May L R Sands, 1st Lt USA
May L R Sands, 1st Lt USA
May L R Sands, 1st Lt USA
May D R Sands I the USA
Mary B T I the USA
Franc O V md r Ist Lt USA
Shuley G V tre I set Lt USA
Hel a Wells I st Lt USAF

Women's Medical Specialist Corps

Ma ly J And so I t Lt USA
H I E Cr cksbank lst L USA
Dot thy M K an s lst Lt USA
Eliz beth L Lambertso I t Lt USA
D othy MacFoege I t Lt USA

Harr t J A Mck al y I t Lt USA
Ol J P tt I t Lt USAF
Cora D Rey ld I t Lt USA
P tr a W k feld I t Lt USA
Mary F We th we I t Lt USA

DEATHS

PELLIZZARI Frank Joseph Lieutenant (DC) USN Sallivan Ind U S Naval Construction Battalion Cent P or Hueneme Calif graduated in 1952 from the St Louis Mo commissioned the St Louis Mo commissioned a li utenant (19 13 October 1952 died 4 September 1955 age 30 in Santo Moncas Calif of mju s received man automobile accident

book a f w of which are no vascular occlusion f nd at utopsy in tw thirds of the insta ce of cerebr 1 infarers (page 26) the val e of vitamin B complex in clearing piment I confus on in elde ly pitients that erro eously was belie ed to have been sen le psychosis or cer eb al arte iosclerosis (page 53) the u e of sod um nit opr side the treatment of patie ts with acute hypertens ve enc phalopathy (page 63) the many factors in different ting betw en cer b al throm bo is and h m rrhage (pages 82 98) in Chin hypertens o as minim l a 150/90 mm He able to prod ce se ere vascular dam g (page 120) nd the value of ser al electro ncephalographic studies including activated t dies (page 124) - RICHARD P TOHNSON G L MC USA

PAIN It M h m d N ur urg 1 C tt 1 by J m C 16 t M D F A C S d W ll m H Sw t M D F A C S w h L S t S t S t S t S b h M D d F J B M D 736 p g 13. 1 St 1 y C bb M D d F J B M D 736 pg 13-f gur 54 tabl Ch l C Th m P bl h Sp gf ld Ill 1955 P \$17 50

This book i will o ganized with a hilpf litable of contituthors dex subject 1 d x and an e tremely valuable bibliography Stati tcldt w re accumul ted over 25 y a period from ca hi torie at M ss chusett Gener I H sp tal Bo ton the Ou n El beth Hos pital 1 Birm ngham E gla d the New F gla d C nter Hosp tal Bo t the U.S. Naval H. spital t Chelse Mass and St. Alba s. N. Y. ad the Cushi e V t ans Administrate Ho pir lat Famineham

The f t part d al with fund ment I spects the an t my phy i ol gy a d p y hiat y of pain The second sect n wgic lt chic g ves n mplete w kabl d tail the v i us technics f rve blick g a d op ativ urgery on the ari u p rts of the ervous ystem freelef of pan It emphasz the digers and the necessity p c ut ons to be take nd plays the pathway erd a d the limi t ton of th arrow methods

The tre tment of specific p flc dt s the thid cti clude pr ctic lly il types of p in and ttenpted treatment e ch individually dic d The author p onal experience are illus tr ted with typical cises

The book is m terful record of p ast king se ich for the clin c l truth in n wer to the problem of p in It cont ins person I commun c tons from m ny outsta d ng neurosurgeons Il over the world who are know perso lly t th autho's These ar c mbi ed beautif lly with a th ugh v age of th liter ture. The complete hine ty of the autho in de ling with such difficult nd perplexing problem i freshing It le e the re der with a feeling thit here til tin this volume is base line nd collect on of truths from which to b ild b tter underst nd ng of destr ct ve p in

-FRANK B CLARE Comd (MC) USN

ANTIBIOTICS ANNUAL 1954 1955 Proceedings of the S cond Annual Symposium on Antibiotics edited by Henry Welcb Ph D and Felre Martibian z M D Second Annual Symposium on Antibiotics Chairman Henry Welcb Ph D Sponsoted by U S Department of Health Education and Welfate Food and Drug Administration Division of Antibiotics In Collaboration with the Journal Antibiotics & Chemotherapy October 25 29 1954 Washington D C 1154 pages including graphs tables and colored illustrations Medical Encyclopedia Inc New York N Y 1955 Price \$10

The present Annual like the previous volume is a compendium of the reports presented at the Second Antibiotic Symposium. The table of contents strongly reflects the stated purpose of the Symposium which was to bring together clinicians chemists and bacteriologists to study antibiotics from different viewpoints. The volume is devoted entirely to recent scientific information on the pharmacology and therapeutics of an ever increasing number of antimicrobial agents and is not in any sense a handbook for the clinical application of antibiotics.

Of particular interest is the extraordinary amount of basic and devel opmental information contained in this volume Furthermore clinical and laboratory investigation has suggested additional applications for antibiotics. Thus some of the newer antibiotics have been found to be effective antifungal agents and one has been shown to stimulate growth in children with simple growth failure. Finally, the tumor suppressing activity shown by certain antibiotics suggests a rather different approach to the treatment of neoplasms and a wider meaning for the term "antibiosis".

The discovery of new antibiotics has kept pace with this developmental progress. Thus 14 new substances with antimicrobial activity are described and preliminary appraisals of their potential effective ness are recorded.

The editors faced a formidable task in editing the 172 reports that constitute the text. As a result the style of writing and completeness of bibliography vary with the individual author and the subject index is incomplete. Nevertheless the editors are to be commended for the rapidity with which this volume was published. It is an excellent inter im summary of the varied aspects of antibiotic research and therefore of great value to the clinical and laboratory investigator who is primarily concerned with the study of antibiotics.

-EDWARD L BUESCHER Maj MC USA

NEUROLOGY Volumes I II and III by S A Kinn er Wilson M A M D
D Sc (Edin) F R C P Edited by A Nin an Bruce F R C P
(Edin) D Sc (Edin), M D F R S (Edin) Lt Co R A M C 2d
dition 2 G00 page 279 ill strations The Williams and Wilk ns Co
Baltimore Mi 1955 Price 337 50 per set of the evolume

The republication of this reference work has been awaited eagerly by most students of neurology it is presented in three volumes instead of the previous two making for easier handling. Fortunately the former adequate format has been tet med. Although a work of this kind almott deft is tevision without a complet rewriting the riginal text represented an era in classic descriptive essy at its best so that complete tewriting would have destroyed its classic and historic flavor. The ditor his avoided this and has done exceedingly well in his revision under the limit tions imposeed.

A ch pter by Ru sell Brain o aphasi prax and agnosia is distinct additi n. Thet have been r pid strides in certain neurologic areas c t lyzed by the d e t of neuro urgery so that today a neurolog c work of any magnitude must n eds be outmod d to a conaiderable d g ee by the time it is publ hed. The mor r cent proc dural adv nece such electroencephalogr phy arteriog phy and pneumonography are not developed o i regrated i to the text to a degree commensuraer with present-day neurologic prescriction not are the frapid advances in the de v l pme t of the newer drugs for epilepsy. Park nsonism et cetera included

The bibling aphy ha been incr ased a id is eason bly up to dat libb gh recent ref rences are not preset in many quant ty. The editor has tried to nellude the mor important advant's but these are occur ring at too pid a rate to allow the text to be as current as one would like The with stead ble clearly libits tied a d well printed

The publication of this revisid edition makes it viable to those who have been unable to obtain a copy of the exhaut of first edition and I believe this trustfulness as a reference work will continue for many ye sit come Although not scurrent a the neophyte neur I ogist would like no apploay is nece any for sufficient an aneurologic classic E by serious n urologist will want thes volumes for figurity terence and they are highly recommended.

-RICHARD R CAMERON COL MC USA

THE COAGULATION OF BLOOD METHODS OF STUDY dtdby L d M T tns M D 240 p gc llustrated Gru & Strat In N w Y k N Y 1955 P \$5 75

I the 1930's when dicumar I was discovered research in blood cagulation flared into act ity and f rm tion concerning hemostasi h s cree ed rap dly and untidily e er ince May thories of co gul t n have been con tructed many new f ct rs have been discovered old ones have been rediscor red on several names have been give to each of th factors Confusio h resulted and II too often att mpt to clar fy the subjet have collapsed in a welter of ac informous debate. This was nly partilly de to the pride of par thood this execution forces. Each discovery involved the invention of modificition of methods and a in any field there were some in e tig tots who eemed incapable of describing methods in such a way this tothers could reproduce their result. Sometimes ye r

passed before it could be determined with certainty that the valious names bestowed in differen laboratories referred to a single factor Nowadays the dust seems to be settling and books like this will help

The Coagulation of Blood is a book of methods "ithout disparagement it may be called a cookbook because the descriptions are so detailed and clear No attempt is made to present theories of coagulation or descriptions of hemorrhagic and thrombotic diseases. Few alternate methods are given. It has been the editor s aim to presen the best one in each case and in most instances this seems to have been accomplished. It is unlikely that many established investigators will abandon their own methods to use those in this book but workers who come presently to the field will profit Perhaps the book may bring a little more coherence into this area, and it certainly can serve as an excellent guide to the clinical pathologist who is called upon to utilize diagnostic methods.

The book was prepared under the sponsorship of the Panel of Blood Coagulation of the National Research Council The editor has relied heavily upon his fellow panel members as contributors has made his selections with care and has insisted upon a high level of presentation. It would be difficult to overestimate the value and importance of this book—WILLIAW IN CROSEN LL Col. MC USA

DIABETES MELLITUS by Henry T Ricketts M D American Lecture Series

Publication Number 241 A Monograph in American Lectures in Endocrinology 123 page illustrated Charle C Thomas Publisher Springfield Ill 1955 Pr ce \$3 25

This little book is a handy guide to the principles of management of diabetes mellitus. The author an expert in the field has based this review on common errors and frequent problems encountered at the University of Chicago Chinics.

This reviewer agrees with the statement that it is high time that the fetish of the fasting blood sugar as a guide to diagnosis be aban doned. The postprandial blood sugar is more logical and convenient A surprisingly large number of subjects are touched on in the course of this essay. Thus although insulin preparations are discussed briefly the recently introduced "Lente" insulin is mentioned. A useful feature is the calculation of the diabetic diet as explained by material modified from lists prepared by the American Diabetes Association.

The advantages of this monograph are that it maintains an eminently practical tone throughout and that all the recommendations are sound well established and accepted The limitation is that the discussions are too brief in many respects even for the general practitioner for whom the book is intended It will be most useful as a practical hand book when used in conjunction with a larger treatise a combination which would serve as a *consultant to the practicing clinician

-S O WAIFT II (MC) USNI

ADVANCES IN PEDIATRICS V lum VII d ted by S Z L ne M D A lat Editor fob A A d M D Mag ID M D A A b I yW cb M D Myr E W gma M D dW r E Wb L M D 351 pag ill ra d Th Y r Book P blish I Cheag Ill 1955 Pic 48

Volume VII continues the fine serie of Adv ces in Pediatrics by outstanding contrib tots. John Caffey provides section on fibrous defects in the corrict walls of growing tubular bones well illustrit d by many rad og ashs.

Meredith Campbell discusses the urinary tract in childhood. He emphasize as always the imp t nee of a ystematic routine of ur log cer minate on in first and children

Gomez Galvan Cravioto nd Frenk of the Hospital Infantil de Mex ico present an excellent a ly is of mal utrition in infancy and child hood with special freference to kwashiorkor poi ting of the similarity of the clinical pictures of kwashiorkor nd m inutrition in var ous reg ns of the world where the diet is comp sed 1 rgely of carbohydrat ad is deficit on in an amal pt in fats vegetable fruits nd milk

The section on infinite celebral p 1 y by Mey r Perlstein is ell pl nined. Precipitat g factor are discuid as will a classification clinical types in associated defects. A broad view of treatment is

Harry Shwachman nd two s oct tes prese t nexcelle t discuss of mucoviscidosis ncl dig n outline of diffrential dignosis between id p thic clac disea e a d muco iscidosi

There is a fine ction on congenital megacolo by Orv r Sw nson He believe is that mo tipati nts will tolerat resection ind a tomos without prelim nary colo tomy but the tire in imprudent to tempt methon colostomy in cases of acute obsition immensed is sention or in newborn or sm II infints in poor condition. The pull through operation is described in dipostor native or discussed.

Each section with one exc ption is followed by a good bibliography An adequate subject ind a the index is provided. The volume is highly recommended to ped ticina declaric surgeons

-MILTON KURZROK Comdr (MC) USN

DISEASES OF THE EAR NOSE AND THROAT by W lliam W lla M rr
M D 2d d 756 pag llustrated Appl t -C tury-C fts I
N w York N Y 1955

Well indexed simple concile clearly illustrated e y to red us able m teri. I with ur boasity typ fies this revised tixt. The bek is prime ruly for the unde gradute student but the mate ial coiled and the up-to-dite presentation is dequite and more to ly for the general practite of but loas a quick ready refine for the practing ordinary longituding the production of the practing ordinary longituding the production of the practing ordinary is not excessive yet contains a multime power in medicitions.

In his first edition Dr Morrison produced a lucid terse well organized study of the anatomy and physiology and treatment of diseases of the ear nose, and throat This fulfilled a basic need for completeness without going into extremes of detail or into the very rare and exotic He gave adequate bibliographies with references to more complete works for those vishing to seek further into a specific subject

In the second edition this same practice is continued with the addition of recent references and newer concepts in regard to anti-biotic therapy and allergy Portions of the text are revised and regrouped for easier correlation and reading. One of the biggest improvements is the provision of easier to read symptom and subject indexes

I should not replace my first edition with the second as the same basic material is covered nearly word for word in the majority of the text, but to any practitioner seeking a new quick reference on present day up-to-date diagnosis and treatment in basic ENT this book would be a valuable asset —LESLIE O STONE R Adm. (MC) USN

OF PUBLISHING SCIENTIFIC PAPERS by George E Burch M D F A C.P 40 pages illustrated Grune & Stratton Inc. New York N Y 1954 Price \$2.75

This short essay contains much good advice—advice which should be heeded by all writers readers and editors of scientific publications. Curiously it is written in a flat off hand style while in contrast the titles of the sections and particularly the excellent illustrations by Roy Robinson are humorous and clever. Thus we have described for us the self plagiarist the summary addict and the board ophiliac. The role and responsibilities of the publisher the lay press and the benefactor administrator also come in for their share of comment.

There is no question but that the present situation of scientific medical writing is unsatisfactory and this little book in a pleasant way has scratched the surface and indicated lines of study and cor rection. Its message deserves a wide hearing

-S O WAIFE L ut (MC) USNR

FORCEPS DELIVERIES by Edward H Den en, M D F A C S First volume of a S ries of Monographs on Obst tric and Gynecology Edited by Claude E H aton M D 225 pages 90 illustrations F A Davis Co Philadelphia Pa 1955 Price \$6 50

This book gives detailed instruction in the proper selection and use of the various types of obstetrical forceps and lefutes the old teaching that the good obstetrician need only to learn how to use one type of forceps and use it well

A concise history of obstetrical forceps is given as background material. The many relatively new improved types of instruments and the finer technics in advanced forceps deliveries representing a dramatic chapter in the history of medical progress are well covered.

A clasf ction is outlined of forcep ope ations according to the station of the he d in the pelvis. The eight positions in which the fetal occuput may lie at the time of operation ite taken up in appropr te and pr g ive o der D fferent i rumental oper tions manual maneuvers and choice of instrument a described cle rly The ubi ct m tter includes the prerequisites fo forceps operation a detiled description of the proper u e of forcips of il types and the advat g and dis dv nt ges of one typ over a other u d r sp cific ex sting cond t on

Ninety e cellent drawings which clearly outli e positi n head instrument technics and the ral polits in Il operations reflect the v st xp rience of th thor both in perative work nd in te chi g at the op ating t ble. The index a d b blogt phy ate f llv adequate

This monogriph is highly roomme ded to anyone practic glob-Stetr CS -EDWARD A. ZIMMERMANN C L MC USA

SEMI MICRO ORGANIC PREPARATIONS by J H W Ik Ph D F R I C 94 pg il trat d Ch I C Th ma P bl h Sp gf ld ill 1954 P \$2

Sem micro tech ics described here a t ndard text are c ming into ner ing d mand because of the eed fo in II cale synthetic the bolgic scine ad wheeer it is nec ary to c n erve materi l

The fir t few h pters are co c ned with b s c sem micro te hn cs s ch s di till t ste m distillation efluxing f lt tion and m lt ng point dete min tin The e ry appar t i well illu t ted I Will written chapters on the preparation of a erie of organic com po ds cover a large numb of th ba ic orga ic react n Th uth h s selected e pe iments d igned to tilize to the f ll t exte t the sem mico eq ipm td scus dearl ch pt s

The bo k is well written co i e a d to the po t

-IRVING GRAY LI Col MSC USA ADVANCED SURGERY OF CATARACT by D 1 B K by M D 271 p g
138 f g d 96 ll tr t (22 plate) f ll l J B L pp t C Phidiph P 1955 P \$27

This monogr ph was the fin I work of great eye surgeon a dynamic personality and ma de tined t take his place on the hono roll of world k wn ophth lmic urgeo s Catar et surgery w his I f study His first volume Surg ry f Cata act was a exhau tive reference work p bli hed in 1950 This sec d volume was written to emphasiz whit he considered be tim his first work. His walth of persinal ex persence in methods of meticulou technic and care in the prevention of complic tons are will described

The volum cont as 13 chapt r including ad a ces fr mithe cutr at literature classif ation f l'ns di es prognosis preoperati e preparation instrumentation and wound healing aspiration technic for congenital catalact detailed technics including incision and suturing complications and the adjustment of the patient to aphakia. The illustrations are well captioned and beautifully done. The bibliography is extensive.

There is much for any ophthalmic surgeon to learn from this book however there are certain dogmatic statements which are controversial. The almost routine use of intravenous curare for akinesia and the heroic method of direct zonular separation though not generally accepted obviously worked well in kirby s hands.

This book is a must" for every ophthalmologist and should be on the shelf of any library furnishing teference material in ocular surgery —JOHN H. MING J. Col. MC. USA

STRESS SITUATIONS edited by Samuel Liebman M. D 144 pages J B Lippincont Co Philadelphia Pa 1955 Price \$3

This handy well printed volume contains a series of articles by serven authors who are well known in psychiatric circles on the common theme of emotional reactions to various stressful situations. The articles were originally designed for presentation before the staff and resident physicians and guests of a psychiatric hospital. The papers are published from the stenographic reports of the lectures and include the questions and answers which followed the talks. This gives an informal tone to the book that makes for easy reading but some of the remarks addressed to the audience seem rather inappropriate for the single reader.

In sophisticated person in the audience. The various chapters seemed rather spotty in quality but it is realized that this is the point where the personal biases of the reviewer are most likely to appear. The volume concludes with an adequate index. Any profits which may actue from the publication of this volume are to be donated to the American Psychiatric Association for use in its work.

This very readable volume is recommended to the busy practitioner who wishes to learn something about how psychiatrists evaluate the reactions of human beings to various stressful life situations

-IRA C NICHOLS Capt (MC) USN

FUNDAMENTAL CONSIDERATIONS IN ANFSTHESIA by Charl s. L. Burst 1

M D 2d edit o 219 pages illustrat d The Macmillan Co New York

N Y 1955 Price \$5 50

This second edition encompasses several changes from the original text published in 1949 with added discussions of muscle relaxants autonomic ganglionic blocks and antiarrhythmic agents. The text is concerned more with the science of anesthesia than with its. The author presents brief concise discussions of the role of the nomic nervous system as it modifies respiratory circulatory and

cular ctivites nd s in turn fluenced by the mor c mmon anes thetic dr gs and procedures Many of the co clusions are based upon or obviou ly influe ced by the animal experimentation conducted by the author and others Of cons derable nterest to Il flight urgeo is the author's statement. Positive pressure re pir ton a abnormal and h rmful It sho ld be avo d d

The art of ane these s n t entirely neglected There s an excellent discussion of ind c t ons f r and methods of re piratory and circulate v control by mech cal a d chem cal m ans The te t is log c lly ar rang d profusely llust ated and deg tely referenc d Controversial subjects are esse tially ignored. The s bi ct of shock is covered in 20 p ges of text 5 of which are 11 strations and references and of car d ac arrhythmia in 20 p ges with 13 pages of Illustrations and refer ences For the student and the busy a sthes ologist the volume can perhaps best be used as a reference index

-ROBERT F CORWIN C L USAF (MC)

SELECTED PAPERS OF DR FRANK N WILSON drd by Fra kl D

j h t M D dE g L p bk M D 1135 pag 11

gacd J W Edw d P bl h r I A Ab M h 1954 P

This book cont as 53 elected p pe of which Dr Frank W ls n ws ether utho r coa thor There al o s a c nc se biogr phy of D Wilson together with h s complete b bli graphy of 152 publications Alth gh 2) of the e d d ot bear his n m a uthor o co uth r they c m from wo k rs in his I borato v nd he contributed greatly to th it pr p rati

The edt s hav perf med a plendd job in the s lection of th papers reprinted o published f the first tim in this book They i cluded those rticle that co tai ed the find me tal theoretic or exper me t l observ t of this great Am ican physic an ind sci ntist Becas Dr Wlson nev p blished a te t of ny k nd thi inf imation formerly could be found o ly in widely so trered journ ls p bli hed over a period of 40 y ar Much of this materi I has bee m a basic reference source for numero s public tions a cluding texts in the feld f electrocardiography nd cardiology Many of th se were publi hed by his former as ciat

The publication of this matical in a single volum has resulted 1 a e tremely valuable book which should be basic r ading m ter al for intern sts a d card ologist and freque t ource reference f r medic I stude t The may friends and admir is of Dr W Is over the world had hoped that some d y this modest person would put t g ther book h thoughts deas a d accomplishments Al th ugh he n prod ced such a volume thi compil ton of h s s lected p pe is n a sm ll w y a s b titute The ed tors are to b co g atul ted for a job well done, THOMAS W MATTINGLY C I MC USA

Novembe 1955)

ANXIETY AND STRESS An Interdisciplinary Study of a Life Situation by

Harold Basouitz Harold Persky Sheldon I Korchin and Roy R Grink
e 320 pages illustrated The Blakiston Div McGraw Hill Book Co

Inc New York N Y 1955 Price \$8

This book reports a study on anxiety and stress in a group of soldiers in aurborne training at the Infantry School U S Army Fort Benning Ga The study made by a distinguished psychiatrist two psychologists. and a chemist was conducted on soldiers undergoing a rigid training schedule that was conductive to anxiety and stress

Various psychologic tests and blood chemical determinations were performed and are presented in 70 tables and 44 figures

This is a well written volume free of typographical errors. There is an excellent chapter on anxiety which will interest every psychi atrist Selected case histories are interesting reading. The study gives evidence of an immense amount of work which has been carefully executed and the conclusions contribute to our knowledge of psychosomatic medicine The method of conducting the study could well serve as a plan for future studies on emotional problems. Much material contained in this book gives new light on the subject of anxiety and stress -- FRANCES L WILLOUGHBY Comb (MC) USV

GERIATRIC ANESTHESIA by Paul H Lothan M D American Lecture Series Publication Number 245 A Monograph in American Lectures in Anes th siology Edited by John Adriani M D 90 pages Charles C Thomas Publisher Springfield Ill 1955 Price \$3 25

In this era of increased life span this is a timely monograph. Many people reaching old age have or develop conditions which must be corrected by an operation if they are to spend their declining years in confort

The book consists of nine easily read chapters which follow the tire proved form for books on anesthesia. The first chapter discusses the patient and the effect of advanced years on each organ in the body Subsequent chapters take up preoperative preparation and preanesthetic medication surgical management choice of anesthetic agent method of administration and management of the anesthetic and postoperative management

The author has done an excellent job of compiling and organizing a mass of information not heretofore concentrated in any one place He has reminded us that by adhering to basic principles namely proper hydration and oxygenation gentleness and minimal duration of pro cedure the geniatric patient can undergo anesthesia and surgical procedure with the same degree of success as patients in a younger age group

There is an excellent bibliography of 39 articles

ANALYSIS OF DEVELOPMENT ed eed by Be 1 m H W ll ph D Sc D P l A W is Ph D M D (bon) ad V Hor H mb ger Ph D 735 pag illustrated W B Sa d C Ph Bad lphus p 1955

In the words of the authors the purpose of this book is to present a modern synthes four knowledge of the principles and mechani ms of development Written in the form of a symposium the volume draws on a wide variety of animal e perimental material to analyze the main pr blems that have confronted experimental embryologists. Some of the most dist ugu shed figures n American embryology are amo g the 28 contributors

No attempt has b en made to describe systematically the development of a y one org nism rath r experimental material has been organiz d around the c ntral problems of cell and t saue different ation. An mportant section s devoted to cellular tructure and metabolism and the possible role of virous cytologic organelles in the differentiation of the cell Another sect on d cribes tissue interrelati uships i the development of speci I verteb ate org n system. The problems of embryologic movements e t blishment f org n f elds reg negation a d determ nation of adult s ze and ant g nic spec f city Iso receive attent on The d u ion s abundantly documented throughout from the exper ment I It atme with an extens e bill ography for each section

This book is a up to dite i implete a discurste discussion of the principles and mech n ms of differe tration as c n be f und lthough the felds u d r d seuss n are n such tap d t te of flux that ome of the mate ial w s outdat d between the time of writ g nd publication As me e per me tal m terial c mes n the specu-It as f the uthors may be further supp sted or my lid ted In uch contro er i l f elds the authors op n are nec ssarily the r own and the re der must make h s own judgments on the basis of the de e p e ented

Analysis of Devel pm t should be v luable to those int re ted in the theory of embryol gy No attempt has be n m de to slant the m ter I t ward of nically import at probl m or the h m n embryo but study of the m te al pr nted hould result in a better underst nd ng of the fund mentals underlying purely descript: human inbryology

-GORDON B AVERY

DIFFERENTIAL DIAGNOSIS OF INTERNAL DISEASES CI I Amily f Symp m d S gn on P th phy 1 g B 2 d re
l laged ed on By J lus Ba M D F A C P
llustrat d G ne & Stratton I N w Y k N Y 1955 d Sy h re is d nd 987 pag \$15

This i the second edition indicate me t fa earlie volume by the ame author This volume sdvdd to two parts Lading Symptoms and Le ding Signs The first p at s subdiv ded stressing symptoms by natomic loc ton in dd ton th part on symptoms in

cludes chapters on Disorders of General Feelings Disorders of Vertigo Nausea and Vomitus Paralysis In coordination and Involuntary Movements Cough and Dysonea Diarrhea and Constipation and Hemorrhages The second part is subdivided into the various systems including fevers habitus and a chapter on glycosuria The title is very all inclusive and one has the feeling in reviewing the text that one's expectancy is not quite fulfilled It would be difficult indeed to discuss detailed pathophysiology detailed differential diagnosis and clinical analysis of internal diseases in 900 pages. In general both the symptoms and signs are presented in a clear concise fashion reflecting the teaching ability of the author Each chapter is concluded by a summary and a generous bibliography on the points discussed A generous use has been made of case histories to illustrate many points While these are instructive this reviewer believes that the space required might have been more informatively used by elaborating further on the point at hand

While there are 60 some figures and two tables of very informative value. I believe that a more liberal use of graphs charts and other illustrations would be more informative than case histories. Presenting differential diagnosis in this fashion necessitates a number of references in the index to various facets of any one clinical entity.

The author makes a practical approach to the psychosomatic aspects of disease and the neurotic component. The book is well indexed. The text would serve as a good reference in medical schools and hospitals and as an office reference to the practitioner.

-FRANCIS W PRUITT Col MC USA

FLIGHT SURGEON S MANUAL Air Force Manual Number 160 5 Department of the Air Force Washington D C 712 pages illustrated Air Uni versity USAF School of Avistion Medicine Randolph Air Force Base R ndolph Field Tex July 1954

Published as an official Air Force manual this volume is an out growth of a small Flight Surgeon's Handbook which was prepared by the faculty of the School of Aviation Medicine in 1942. A second edition appeared the following year and a Flight Surgeon's Reference File was published as an official Army Air Forces manual in 1945. The present loose leaf binding is the most comprehensive publication of aviation medicine ever to appear in one volume.

The manual is composed of 11 sections of which the first 5 cover more than 500 pages and are of major interest to the practitioner of aviation medicine. These sections are on aircrew effectiveness preventive medicine aeromedical aspects of unconventional warfare aviation medicine research and development and aeromedical evacuation. The last 6 sections of the book are on administrative military aspects of aviation medicine in the Air Force.

For a work of this so pe the index is in dequate b th in the number of entries and in cro references For example as common term as low pres are chamber was not included nor wa it found under decompres ion chamber Otitis media is gi en a si gle page list ng but unde dysb rism there are other page references to aerot ris media

This manu I particul rly the first five sections ha been widely recommended for tudy by physicians preparing fo spec alty board examin tions in aviat a medicin. Unfortunately the book not f public sale Cop es have bee distributed to all Air Fo ce tre tment facilities and to each aviat on medic I officer and in addition t leading med cal I brar e through ut the country As a customary in offic al publications no author credits are given

--- ROBERT I BENFORD C L USAF (MC)

TEA A Sympos m the Pharma I gy dithe Phy I g nd P yeh I g

Eff t of T dited by H mry J Kla b g Ph D 64 page llus

tra d Th B I g I S F und on Ltd W h gton D C 1955 P. \$1

Fo the vmposium ven autho present d their ve w on th vare ous aspects of the effect of tea on the h man Th r are competent d cussions of the ff ct of tea on body sy tems and on psychologic function and even on der t n of the opt mum t m for brew g and its el tion to the caff ine and ta nat co t nt of the p od ct Two of the a ticles h d be n p blished I ewhere Th views of the speak is ar uniformly favo ble to the ng tion of thi beverage Except for the two art cl previously publi hed the bo k does not contrib te much original of rm t on It may be of other t to those de ling with d t formul tons a d to phys cian wi hing to l arn the m t rece t opini n concern g the v lue of tea -PAULK SMITH C I USAFR

HISTORY OF THE SECOND WORLD WAR U d K gd m M d l S Edt in-Ch f S A thur S M N lty K C B M D F R C P F R C S THE ROYAL AIR FORCE MEDICAL SERVICES dt d by Squad L d S C R ford W 1 b M A M R C S L R C P
R A F V lum I Adm 1str t 611 pag llustrat d P bl hed
by H Maj ty Sta o y Off L d E C I 1954 T be pur had forn York Hs Kigwy Ld WC2P

This is the first of three volumes that deal with the Roy I Air Force Medical Sirvices in World War II Concerned primarily with dminis tration it I ye the gr indwork for the two ucc eding volumes which will te t the Command and the Campaigns respectively The thr evolume un t 1 o e part of the U t d Kingdom Medical Series

The thirteen chapt concern the following topic minning with medic I officers and ur ing orderlies the nursi g and dent I service ho pit is ccommodato hygiene nd s n t to medical eq ipment and supplies med c l arra g ment for the Women's Aux lary Air Force if ev cuatio of casualt es air/sea re cue medic l'aspect

of trooping and prisoners of war Each section is authoritative and readable but unlike previous volumes in the series (Medicine and Pathology and Surgery) this volume does not include bibliographic materials

The account has objectivity and balance Recorded here are the mistakes as well as the successes of the RAF Medical Services. Medical administration is treated within the framework of the major command mission and evaluated accordingly the medical element per server becomes isolated. At the same time the account reflects the human element.

Medical planners no less than students of military and administrative history will find the narrative of particular interest For comparative purposes it is interesting to trace British and American attitudes and policies along similar lines For example the British had a 30 year lead over the United States in the organization and development of a separate air force and a supporting medical service. Their experience in such developments as the Central Medical Establishment accordingly provided inestimable help for the harassed U.S. Air Forces which had to improvise along command lines in World War II. Yet despite their forward looking organizational advances the British high command appears to have been just as reluctant as the United States high command to accept air evacuation of the sick and wounded as a routine operating procedure.

For the astute reader there are lessons to learn from careful study of this important volume,—MAE M. LINK, Pb D

TREATMENT IN PSYCHIATRY by Oskar Dieth Im M D 3d edition 545 pages Charles C Thomas Publisher Spingfield 111 1955 Price \$950

This edition follows the second edition by about five years and is essentially the same book with which most psychiatrists are already familiar. Certain subjects that were included as new developments in the second edition have been integrated into appropriate sections of the text and new material including some on chlotpromazine and reserpine appears under the heading of current progress (the final chapter in both editions). A chapter on dynamic psychotherapy te places one which was formerly entitled. Distributive Analysis and Synthesis. The discussion has been revised and improved consider ably but the basic therapeutic philosophy remains about the same as before. The cases presented are the same as used previously to illustrate distributive analysis.

The scope of this book is very broad sometimes perhaps to its detriment but it remains a useful conservative general reference in the field of therapeutic psychiatry. The new edition is not sufficiently different from the previous one to warrant having both in one s personal library —#ILLIAMI ANDERSON LE Gol MC USA.

- HUMAN PATHOLOGY by H w d T K ne M. D LL D 8th d on 960 pge 557 ll trems blk dwhend 19 ubje 14 pl J B L pp ott Co Philad lphia P 1955 P \$15
- SPLENIN A IN RHEUMATIC FEVER The Tent of Spl. A aflamma on Marthy Al F. Churn, M. D. Luc l. V. M. Judib Wood M D d Mry Rbt R N fm Th Rheum t F R h I ttt N thwe m Uni ty M d 1 Sch 1 Ch g III 87 pag Ch 1 C Th ma P bl her Spr gf ld III 1955 P \$3.75
- INTRODUCTION TO OPERATING-ROOM TECHNIQUE by Edna C m l Bry R N d Mry L Khn, R N M N 154 pag Th Blt t D M Gr w H Il Book C Inc N w Y k N Y 1955 P c \$4
- A SHORT HISTORY OF MEDICINE by Eru H A k k hi M D 258 pg Tb R Id P Co N w York N Y 1955 P \$450
- THE MECHANISMS OF HEALING IN HUMAN WOUNDS A C lat f th Cl 1 d T F tor 1 l d th H l ng of H m Surge 1 W nd Butns UI d Do or S te by Sh ttuck W H twell M S M D Ph D Surg ry F A C S F 1 C S 166 p ge 44 llustr Charl C Th mas P bli h Sp gf ld Ill 1955 P \$475
- ANESTHESIA IN OPHTHALMOLOGY by W 1t S Atk n, M D. 101 p g
 42 ll t t s. Ch l C Thom P bl h Spr gf ld III 1955 P \$3 25
- ESSENTIALS OF CHEMISTRY by Grth O Lw M A. 6th dt 544 p ge llustr t d J B L ppin Co Ph lad lphin P 1955 P \$4 75
- LABORATORY EXPERIENCES IN CHEMISTRY by Grth O L M A 6th dt 184 pag 6 ll De gned t b d C ; e w 6th dat on f E t I f Chem ty] B L pp ot Co Ph l d l ph P 1955 Pr \$1.75
- APPLIED MEDICAL BIBLIOGRAPHY FOR STUDENTS by William D P t II 142 p g Charl C Th ma P bl h Sp gf Ld III 1955 P \$4 50
- NURSING PRACTICE AND THE LAW by Milton J L ik d B E
 And n, R N ED D 2d d t 400 pag J B Lipp tt Co Phid lph P 1955 Pr \$6
- SURGERY OF THE AMBULATORY PATIENT by L. K. Frg. n. M. D. F. A. C. S. w.th. Set. o. F. crur. by L. K. plan, M. D. F. A. C. S. C. tt. b. t. H. ny, M. B. m. M. D. F. A. C. S. Edw. J. P. I. k. M. D. D. M. SC. (Surg.) F. A. C. S. d. H. nt. H. St. M. D. D. M. SC. (Surg.) F. M. SC. (Surg.) F. M. SC. (Surg.) F. M. SC. (Surg.) F. M. SC. (Surg.) F. M. SC. (Surg.) F. M. SC. (Surg.) F. M. SC. (Surg.) F. M. SC. (Surg.) F. M. SC. (Surg.) F. M. SC. (Surg.) F. M. SC. (Surg.) F. M. SC. (Surg.) F. M. SC. (Surg.) F. M. SC. (Surg.) F. M. SC. (Surg.) F. M. SC. (Surg.) F. M. SC 3d d o 866 pag 664 ll tr t JB L pp ott Co Philad l phia P 1955 P \$12
- P \$6
- POLYCYTHEMIA Pby 1 gy Diagn d T tm B d on 303 Ca by J b H L w M D D Sc F A C P 136 pag all tr t d Mod M d 1 M gr ph N mbe 13 Gc & Stratt I N w Y ck N Y 1955 P \$550.
- ROOT CANAL THERAPY by L is L G m n, D D S, Dr m d d t FACD 4th dt 399 pag 347 ll t t ns 140 fgur 1 c for Le & F b ge Ph lad John P 1955 Pr

INSTRUCTIONS FOR AUTHORS

The United States Armed Forces Medical Journal is devoted to the publication of original investigations observations and clinical experiences of interest to personnel of the medical services of the three military departments Contributors who are affiliated with one of the military services in a commissioned enlisted or civilian capacity should forward manuscripts to the Surgeon General of the United States Army Navy or Air Force Washington 25 D C in accordance with existing regulations The covering letter hould state that the author desires the manuscript to be given consideration for publication in this Journal Other authors should send manuscripts directly to the editor Accepted manuscripts become the property of the Armed Forces Medical Publication Agency and will not be returned

MANUSCRIPTS

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REFERENCES

References to published literature should be listed at the end of the article in the numerical order in which they are cited in the author's text. Care and accuracy in their preparation will expedite publication of the article. Following are correct examples of references

Fleming A Young M Y Suchet J and Rowe A J E Penicillin content of blood serum after various doses of penicilin by various routes

content of oloog serum arter various upsets of pentinning by various found.

Lancet 2 6°1-62* Nov 11 1944
Cabot R C Pernicious and secondary anemia chlorosis and leukemia.

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FIGURES AND TABLES

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UNITED STATES ARMED FORCES MEDICAL JOURNAL

Published Monthly by the Armed Forces Medical Publication Agency Department of Defense



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UNITED STATES

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WASHINGTON 1955

Monthly Message

In 1911 I took a cour e in sociology under Profe for T \ Cuver at Harvard. In his first lecture he propounded the que tie what is progres? That became our theme of dieu ion for the entire year and the course ended with the same que tien Many times we think we make progress when as a matter of feet all we do is to bring about change.

Although unquestionably we have made strides of real progres in medicine during the past half century still we must not located the progression of the past Every now and then we should ask our diversible or not we are deviating from our main axis so that we find ourselves in periods of change rather than progression of the progression

Therefore it is time to reappraise the whole subject of medical education to ascertain whether or not it should be put together and presented to the student with greater effort in a more synoptic type of instruction so that man may be considered as a whole with the various aspects of modical teaching centered about him and co-ordinated one with another rather than con idering each organ or system as an entity unto itself \lready several experiments are in operation at some of our medical schools and the Association of American Medical Colleges has begun a series of six annual teaching institutes to consider the whole structure of medical education (1) physiology biochemistry and pharma cology (2) pathology microbiology immunology and conetics (3) anatomy histology embryology and anthropology (1) modical ecology (5) clinical teaching including the internship and (6) specialty training and the continuing education of the physician These institutes should be provocative of considerable free discussion and all of us in the medical profession will await with great interest the reports of the proceedings

Frank B BERRY MD
A sist nt S creta y of Def n e
(Health and M dical)

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Foreword

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FRANK B BERRY M D

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UNITED STATES ARMED FORCES MEDICAL JOURNAL

Volume VI

February 1955

Number 2

EARLY MANAGEMENT OF THE PARAPLEGIC PATIENT

HOWARD A RUSK Brigadi r Gene al USAFR (MC)

SINCE the adoption of the policy early in the korean conflict of transferring severely disabled patients to the Veterans Administration hospitals as early as possible, the military medical officer is not as likely to be responsible for the rehabilitation of paraplegies as formerly. The management of the patient with traumatic paraplegia from the onset of his injury until such transfer takes place, however, is definitely a responsibility of military medicine and much of the later success in restoring the patient to the best mode of life of which he is capable is dependent on early management.

Paraplegia is usually thought of in terms of battle casualties, but the number of cases resulting from accidents is of significance in itself. In World War II, about 2 500 were thus disabled as a result of battle injuries, accidents, and disease, but during this same period some 15,000 civilians became paraplegic from accidents alone. Although more than 1 700 of the original group of 2 500 World War II paraplegies have been discharged from Veterans Administration hospitals, for every patient discharged there has been an admission as a result of accident or disease

Experience in military and Veterans Administration hospitals and civilian rehabilitation centers has shown that despite the severity of their disabilities a high percentage of paraplegic patients can be retrained to live productive lives Experience has also shown that it takes more than twice as long to clear up the complications due to inadequate management, such as kidney disorders, decubitus ulcers and contractions, than it does to complete the total rehabilitation program per se

In general the management of the paraplegic patient falls in two broad phases the definitive and rehabilitation phases. How ever as kessler and Abramson' have pointed out "the division between definitive and rehabilitation medicine is purely artificial actually both phases must proceed simultaneously and they must be carefully integrated so that they become part of the one overall program directed toward a common goal

In both of these phases the needs of the patient can be met only by an integrated team approach to the patient and his prob lem The internist is concerned with the patient's nutritional problems the neurosurgeon with the compression of the spinal cord pain and relief of spasticity by surgical methods orthopedist with contractures spinal deformities and bracing the urologist with the problems of the bladder and the plastic surgeon with decubitus ulcers. No one person regardless of his experience and training can be competent to meet these diverse needs of the patient

MANAGEMENT OF THE ACUTE INJURY

Of particular importance to the military physician is the man agement of the patient during the acute period following the injury. The proper management of the patient from the time of his injury before he can be moved a period of 14 to 18 days can prevent a great many of the complications that are frequently associated with spinal cord injury spare the patient subsequent discomfort and reduce the cost of extensive hospitalization

A patient suffering from partial or total paralysis from acute spinal cord injury should be removed from the scene of the ac cident with the greatest care Blood loss and surgical shock are rarely important factors except in multiple injuries. Frequently the spinal cord has been transected after the accident by over zealous first aiders who remember the old rule transport the patient with the spinal cord in hyperextension. This rule is obviously illogical because posturing should depend on the type of injury. The patient's back should not be flexed or hyperextend ed llis head should not be lifted unless its position interferes with respiration. He should be transported in a neutral position on a level surface such as a stretcher or a wide flat board If he must be lifted this should be done slowly preferably with men working together to keep his head neck back and legs all held straight in the neutral anatomic position. An ordinary door because of its size strength and rigidity makes an ex cellent stretcher Care should be taken not to bounce or lostle the patient.

As little movement as possible should be allowed during the patient's initial care Roentgenograms of the back should be taken on the original stretcher It is preferable to defer roent genography rather than risk further trauma

A flat, hard surface with a foam rubber mattress is satisfactory for a bed and a Stryker frame may be used to enable nurses and attendants to turn the patient frequently without risk of further nurses and attendants, as a single twisting or flexion of trained spine may be enough to make a reversible spinal cord lesion into an irreversible lesion with no hope of further return of function to the muscles of the lower extremities

In our experience at the Institute of Physical Medicine and Rehabilitation, New York University Bellevue Medical Center, early laminectomy is desirable in spinal cord injuries (except in high cervical lesions), especially if block is demonstrated Wo believe that it is impossible to diagnose accurately transection in contradistriction to malfunction due to contusion and edema Laminectomy done by a skillful neurosurgeon carries with it such a minimum risk that only in multiple injuries and shock should its exclusion be seriously considered Psychologically, laminectomy is invaluable in the rehabilitation phase for if the patient can be told unequivocally that his spinal cord is transected, acceptance comes much more easily and facilitates an active training program tremendously ¹

MANAGEMENT OF SPECIFIC PROBLEMS

Skilled nursing care in the management of the paraplegic patient is fundamental. It should be turned at least every two hours night and day to prevent bedsores. Decubitus ulcer most frequently occurs in the sacrum, trochanter, and ischium. In addition, ulcers may develop over the knees, on the heels of the feet and on the forehead in the case of a patient with a cer vical vertebral fracture in the prone position. Light massage of the skin over pressure areas can be of help in preventing ulcers.

During the period of spinal shock, many paraplegic patients cannot lose body heat by perspiration from the paralyzed portions of their bodies and, consequently, there may be spontaneous febrile episodes if specific causes cannot be found, antipyretic measures such as acetylsalicylic acid, fans, cold sponge baths, and ice water enemas can be used Sweating usually returns after spinal shock subsides and in some patients profuse sweating may develop over the nonparalyzed portion of their bodies

Because few paraplegic patients have severe pain, opiates should be avoided if possible. In most instances pain can be controlled with acetylsalicylic acid compound and sedatives, while opiates should be used only as a last resort. The para plegic patient who is also a drug addict presents one of the most difficult problems in medicine.

Acute spinal cord injury may be followed by profound dis tention of the bowel This occasionally becomes so severe as to embarrass respiration interfere with ingestion of food and produce severe discomfort Distention should be treated with neostigmine methylsulfate (prostigmine) intramuscularly or by rectal tube enema and if necessary Wangensteen drainage The rectum should be emptied every other day by suppositories enemas or digital evacuation

An indwelling urethral catheter (Foley) should be introduced early during the acute period. The bladder should be irrigated three times daily with isotonic sodium chloride solution Care must be taken that the catheter does not become blocked and it should be changed at least twice weekly Absolute asepsis must be the rule throughout The abdomen must be checked fre quently for bladder distention

The use of small repeated doses of a urinary antiseptic such as methenamine or of sulfonamides will help prevent urinary infection The development of bowel and bladder automaticity requires meticulous training through the co-operative efforts of the physician nurse and patient

METABOLIC MANAGEMENT

high caloric (4 000) high protein (150 gram) diet is es sential with protein hydrolysates added if tolerated If a pa tient cannot eat satisfactorily whole blood serum albumin or plasma expanders should be given intravenously in small re peated doses Plasma should be used with caution because of the possibility of hepatitis As Cooper and Hoen have pointed out any acute injury to the spinal cord which is sufficiently severe to cause paraplegia produces a marked catabolism of body protein which is reflected in the urinary excretion of large amounts of nitrogen During the first two weeks after injury there is invariably a strongly negative nitropen balance of as much as 95 grams a day Because a high protein diet may in crease nitrogen output clinical difficulties are commonly en countered in maintaining an adequate nutritional balance. In the majority of patients however a normal nitrogen balance is re established eight to 10 weeks after injury

Other metabolic disorders reported by Cooper and Hoen include impaired liver function as evidenced by the browsulphalein liver function test an invariable decrease in basal metabolic rate unilateral or bilateral mammary enlargement in about 20 percent of male subjects with traumatic paraplegia testicular atrophy in more than 50 percent of male patients and cessation of men struction for a period of three to six months in young adult female patients

An intramuscular injection of 50 mg of testosterone propionate daily from the first day of injury will decrease the incidence of tissue breakdown, osteoporosis, weight loss, and decubitus ulcer formation

Patients with paraplegia often exhibit marked atrophy of the unaffected upper extremities from disuse or malnutrition. It is important, therefore that conditioning exercises be started early Patients should be started on active exercises of the unaffected parts of the body with special precaution to prevent spinal flexion or hyperextension Exercises to strengthen the triceps and finger flexors are particularly important as these muscles are essential in "crutch walking." Many hospital routines include a trapeze or monkey bar to facilitate movement. This, however, does nothing to develop the tricep muscles in fact, because gravity pulls the patient down, there is often a disuse atrophy of the tricep.

I wice daily all joints of the lower extremities should be moved passively 10 times through a complete range of motion. Care must be taken to prevent drop foot. The sheets should be left loose over the foot of the bed and the patients feet should be kept at a right angle to the leg at all times, either by a footboard, a posterior splint or a half shell plaster cast. These patients must have a 90 dorsiflexion of the foot at the ankle in order to be fitted properly with braces and shoes for gait training

A simple but valuable procedure in the postoperative management of the paraplegic is early standing through the use of the tilt board With the use of this board, as soon as it is orthopedically safe, the complications caused by prolonged bed rest can be avoided and urinary complications minimized

In conclusion, with proper management from the time of injury, many of the complications frequently associated with traumatic paraplegia can be prevented or their effects mitigated

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THE Q Tc, AN AID TO THE DIAGNOSIS OF RHEUMATIC CARDITIS

GASPER A GULOTTA C pt USAF (NC)
WESLEY L PETERSON C pta USAF (MC)
ROBERT S DANIELS, C pt USAF (MC)

THE Q TC (Q-T interval corrected or h) is the electrocard ographic measurement of the duration of the Q T interval corrected for heart rate

The Q T interval is measured from the beginning of the Q wave to the end of the T wave There are several formulas for correcting the measured Q T interval for rate The most commonly accepted is Bazett's forrula. He related the measured Q T interval to the square root of the cycle length. This formula can be expressed as follows.

FACTORS AFFECTING THE Q-To

The duration of the Q Tc is affected by many factors (table 1) Exercise and oxcitement have been shown by Taran and Szilagyi to prolong the Q Tc This is particularly important in that falsely elevated determinations may be obtained. The electrocardiogram should be taken at basal conditions of physical and emotional rest.

Hypertension con_estive heart failure heart enlargement and myocardial infarction have been shown to prolong the Q-Tc This has been explained by various authors on the increased length of the cardiac fibers and secondary inofficient oxygen consumption.

Tung studied 14 cases of massive tuberculous pericardial effusion and found that the Q-Tc was below the upper limits of normal He concluded that this would be an important point in differentiating massive effusion from cardiac dilatation Taran and Ordorico presented 13 cases of rheumatic pericarditis and

Fom U.S. A: For H p 1 F i E. Wirren A: F B Wy Dr G 1 ow 237 J ff on St. Brookly N Y

found that the Q Tc was within normal limits in 12 The Q Tc became prolonged after the initial episode of pericarditis cleared and the predominant manifestation was rhoumatic carditis

TABLE 1 Facto s that affect the du at on of the Q-Tc

Types ff t	Pr l ging Q-T	Sh n ng Q-Tc	
Phys lgc	Ec: Etmt		
Cards	Hypert on C ng t fulur H art l g m t Rh umatc d t I t t cul rh t block My c rdial fs t Dy gh t	Predts PologdPR treal ad A/V d cust soft treated to	
D g therapy	Em é Gai iqiv	Dg li Slcylt Oys Cort	
M tab i c	Hypocal mia Hypokal mia		
st ll as	filum dat gg p 15 û g Pulmonaty mbolism		

The literature on the usefulness of the Q Tc in rheumatic fever has been controversial. There is no unanimity of opinion on the technic of measurement, the selection of cases, and the upper limits of normal. The technic has included determining the Q Tc in lead II, in the lead with the highest T wave, or obtaining an average of many leads "I The activity of the disease process in various group studies has been inconsistent. There is no agreement on the upper limits of normal.

hatz "White and Mudd," and Dock stated that the Q-Tc is of little or of no clinical value Solomon and Zimmerman. Wein stein and associates, "and Abrahams!" found evidence that the Q-Tc was prolonged in active theumatic fever Iaran and Szilagy, studied 50 normal children and 50 children with acute rheumatic carditis and found that there was almost complete cor relation of a prolonged Q-Tc in the carditis group and of a normal Q-Tc in the control group They also showed in another study." of 123 patients followed for a period of one year and of an additional 17 patients followed for a period of four years that the

Q Tc could be related to prognosis The patients with greater prolongation of the Q-Tc elevated over the longest period of time developed increased valvular defects and progressive heart enlargement. Conversely patients with a Q-Tc that approached aormal and in which the Q-Tc remained elevated for a shorter period of time developed little or no cardiac damage

Digitalist has been found to shorten and quinidine to prolong the Q-Tc Salicylate therapy, oxygen and cortisone affect the duration of the Q-Tc therefore therapeutic measures must be considered in its evaluation

The Q-Tc is modified by electrolyte imbalance particularly changes in the calcium and potassium levels. Hypocalcemia prolongs the Q-Tc and this may have clinical significance in un recognized calcium deficiencies. The work of Bellet and Finkelstein on potassium deficiency was an important con tribution. This has been particularly useful in the treatment of diabetic acidosis and companies.

Other conditions that can cause prolongation of the Q Tc are intraventricular heart block, semetine therapy, illuminating gas poisoning pulmonary embolism and the dying heart, see the condition of the dying heart, see the condition of the dying heart, see the condition of the condition of the condition of the condition of the condition of the condition of the Q Tc are introduced by the condition of the Q Tc are introduced by the condition of the Q Tc are introduced by the condition of the Q Tc are introduced by the condition of the Q Tc are introduced by the condition of the Q Tc are introduced by the Q Tc a

TECHNIC OF DETERMINING THE O-To

Taran and Szilagyi have written several articles on the measurement of the Q Tc In these articles they stress important points in differentiating the diphasic T T U fusion T P fusion, and inverted U waves The importance of taking numerous meas urements in many leads is stressed This is demonstrated in tables showing the margin of error in 3 cycle 8 cycle 12 cycle and all cycles per minute determinations It was concluded that the most practical method with an acceptable margin of error was a minimum measurement of six leads of six seconds each The leads used in their study were 1 ° 3 and CF2 CF4 and CF5

MATERIALS AND METHODS

It was the purpose of this study to determine whether the Q-To had value as an aid in the diagnosis of rheumatic carditis in young men we selected 25 normal airmen between the ages of 17 and 2, who had no past history of heart disease and in whom auscultation of the heart and roestgenograms of the chest were normal. These were used as controls Electrocardiograms were obtained from 32 male patients with proved rheumatic disease of comparable age who fulfilled Jones diagnostic criteria Only electrocardiograms prior to therapy were used. The authors were aware of each diagnosis at the time of measurement, Because of the type of mathematical calculation involved however it is betwee that the values obtained were not subjectively influenced.

We have interpreted only electrocardiograms taken on a string galvanometer and measured the QT and RR intervals in six second lengths in leads 1, 2, 3, and V_1 , V_4 , and V_4 (total 36 seconds) The electrocardiograms were read with the aid of a magnifying glass and calipers A Sanborn electrocardiograph ("cardiette") powered by hand winding and battery was used The electrocardiographic machines were checked monthly for accuracy of timing

TABLE 2 Ave age Q Tc in normal persons

Pate t	PR trval	Rat	å 1 vA T-Q	A rg RR	Ave ge Q-Tc
1	0 16	90	0 330	0 673	0 402
2	14	64	374	928	386
3	18	80	348	751	401
4	13	84	320	715	379
5	14	100	288	599	372
6	14	76	340	791	382
7	14	86	322	695	386
8	16	86	328	702	392
9	14	69	360	878	385
10	17	106	290	566	385
11	14	79	337	764	386
12	16	79	328	760	376
13	17	88	292	681	354
14	14	80	321	756	369
15	15	65	364	922	380
16	17	77	350	784	395
17	14	70	364	853	394
18	13	80	328	752	379
19	16	79	332	762	380
20	16	75	333	808	371
21	12	100	284	602	368
22	13	94	320	643	397
23	13	84	335	714	396
24	19	90	318	667	390
25	16	75	348	803	389
A erag	0 15	85			0 384

RESULTS

The data obtained from the normal control group is summarized in table 2 The P R interval varied from 0 12 to 0 19 second (av erage 0 15) and the rate from 65 to 106 (average 85) The Q Tc ranged from 0 354 to 0 402 (average 0 384)

P	PR rv i	R	Av mg Q-T	A s RR	Avens QT
1	0 15	75	0 376	0 803	0 420
2	22	92	384	658	470
3	22	84	380	717	447
4	15	88	348	685	424
5	19	63	424	949	436
6	16	100	356	604	458
7	21	78	386	770	440
8	15	78	362	762	415
9	16	70	376	860	406
10	21	58	408	1 030	401
11) 20	85	354	725	416
12	20	76	372	797	417
13	19	90	341	665	419
14	18	128	312	470	456
15	18	68	388	680	415
16	22	88	340	678	413
17	18	99	338	605	430
18	12	93	340	645	423
19	18	104	320	579	421
20	20	75	388	826	429
21	20	92	352	646	439
22	18	100	338	605	430
23	17	52	460	1 115	440
24	18	99	336	605	432
25	16	77	390	780	441
A mag	0 17	85			0 429

The data obtained from the rheumatic group (table 3) shows that the PR interval (excepting in those patients with a PR interval of 0.24 second or above) ranged from 0.12 to 0.29 second (average 0.17 second) The rate varied from 52 to 128 (average 85) and the Q-Tc ranged from 0.401 to 0.470 (average 0.429)

The data obtained from the rheumatic group with P R prolonga tion of 0.24 second and above or with auricular ventricular dissociation is summarized in table 4. The P R interval varied from 0.24 to 0.42 second (average 0.29 second), the rate varied from 6.3 to 98 (average 7.3), and the Q Tc ranged from 0.383 to 0.417 (average 0.395)

TABLE 4 Average Q Tc n rheumatic patients with P R intervals of 0 24 second or above and with A/V d ssociat on

Ptt	P R ım ıval	Rt	A erag Q-T	Av ge RR	Ave ag Q-Tc
1	0 31	68	0 364	0 883	0 386
2	A/V	86	328	695	394
3	42	70	368	860	383
4	24	98	308	610	394
5	24	64	404	934	417
6	24	63	394	950	404
7	A/V	68	365	872	390
A e age	0 29	73			0 395

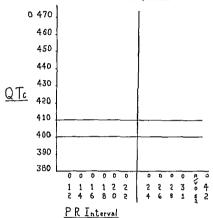
DISCUSSION

Comparison of the Q Tc with the P R interval in 32 patients with acute theuratic fever is rade in figure 1. In the seven patients with either auticular ventricular dissociation or a P it interval of 0.24 second or over it was noted that five fell in the range below 0.400, one in the range 0.400 to 0.410, and one in the range above 0.410. It is our opinion that, in suspected rheuratic fever patients with these findings the Q Tc is of doubtful value.

In figure 2 we have plotted the values of the Q Tc obtained from an average of six leads in 25 normal controls and 25 theu matic patients excluding the seven patients with auricular ventricular dissociation and P it prolongation of 0.24 second and above. There was slight overlap in the range from 0.400 to 0.410 Most of the cases (92 percent of the controls and 92 percent of the rheunatic fover patients) fell outside this range. As person in the control group had a O Tc higher than 0.410 and no patient in the rheunatic fever group had a Q-Tc less than 0.400

We have accepted 0 400 as the upper limits of normal for the Q Te in voung adults. The range from 0 400 to 0 410 must be

considered equivocal The presence of a QTc greater than 0 410 in a patient suspected of having acute rheumatic fever would seem to substantiate the clinical impression



Fgre 1 Th Q-T compar duth th PRiter ali heum t fev p ti is.

It is our opinion that the Q Tc is valuable as an aid in the diagnosis of rleumatic carditis in young adults when the following criteria are observed (1) The patient should be at basal conditions when the electrocardiogram is recorded (2) Photographic electrocardiogram statier than directly written electrocardiograms should be used (3) The Q T should be measured with the aid of magnifying glass and calipers in six leads of six seconds each and an average taken (4) Drug therapy auricular ventricular dissociation prolonged PR interval and pericarditis are factors with h must be considered in evaluating the Q Tc

SUMMARY

The Q Tc is the electrocardio_raphic measurement of the dura tion of the Q I interval corrected for rate

The QTc was determined on the electrocardiogram prior to therapy in 32 patients with proved rheumatic fever and compared with the QTc obtained from 25 normal controls It was found that 0 400 could be accepted as the upper limit of normal, 0 400 to 0 410 as equivocal and above 0 410 as prolonged The presence of a QTc greater than 0 410 in a patient suspected of having acute rheumatic fever substantiates the clinical impression

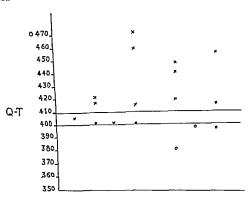


Fig. e 2. Ave age Q Tc. n normal pe sons (o) and sheumatic fever patients (x)

The Q Tc in patients with proved rheumatic fever with a prolonged P 3 interval (0.24 second or longer) or auricular ventricular dissociation was within normal or equivocal limits in six or seven instances

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FRANKFORD ARSENAL RECEIVES HEALTH CERTIFICATE

Fr nkford Ar enal in Philadelphia o e of th Army Ordnance Corps larg st ind stri lestablishm nts was recently awarded the Certificate of Fealth V inte ance of the Occup tional Health Institute for pro-ding its employees with the best kind of constructive health service med at keeping workers well and c tring the inc dence of accide to and dise se. The cert f cate was prese ted to Brigadier General Jo eph V Colby USA th Commanding Offi er by Dr Glenn S. Ev rts regional con ultant of th Occup tional Health Institute which i nonprof t organizat n Dr L urence P Develin is medical director of the arsenal

COLD INJURY TREATMENT CENTER IN KOREA

Report of Operations During Winter of 1952 1953

JOHN W VESTER Frst Lieutenant MC USA
CARL N EKMAN Lieutenant Colonel MC USA

THROUGHOUT the history of warfare casualties resulting from exposure to extremes of environmental temporature have hampered the operation of atmies in the field. The United Nations forces in Korea have added further chapters in the struggle to overcome these hazards.

The winter of 1950 1951, characterized by extreme operational difficulties due to the sudden onslaught of the Chinese communist forces saw upwards of 2000 injuries due to cold in jury 'Only about 1000 such injuries occurred in the winter of 1951 1952, because of a more stabilized tactical situation and an extensive cold weather injury program 'This program was continued during the winter of 1952 1953 and all components of the United Nations forces in the Eighth United States Army were directed to evacuate patients with cold injuries to this hospital which was designated as the Cold Injury Treatment Center. The single exception was the British Commonwealth division which elected to treat its own patient, with cold injuries.

During the period covered by this report a total of 200 patiens with cold injuries were reported from the Eighth United States army and 46 from the Korean Communications Zone making the following and 46 from the Korean Communications Zone making total of 3.6 patients for all of Korea This report concerns the with an analysis of the 226 patients who were treated a hospital Detailed information for evaluation of the remain patients is not available to us however, it is believed cause the patients included in this article are almost entired combat units where opportunit, for savare cold injuries in mum whereas those art included are trainly from a units the exclusion of the lature grap and not alter to impression that cold injuries in Korea crisin, the winter 1953 where confars with a narrow of 11 birs, had make the cold injuries in Korea crisin, the winter 1953 where confars with a narrow of 11 birs, had make the cold injuries in Korea crisin, the winter 1953 where confars with a narrow of 11 birs, had make the cold injuries in Korea crisin, the winter 1953 where confars with a narrow of 11 birs, had make the cold injuries in Korea crisin, the winter 1953 where confars with a narrow of 11 birs, had make the cold injuries in Korea crisin, the winter 1953 where confars with a narrow of 11 birs, had make the cold in a confars with a narrow of 12 birs.

Because no surgical facilities were in operation at this hos pital patients with cold injuries and major wounds or those requiring surgical intervention were routed through normal evacuation channels to units having surgical facilities

All patients admitted to this hospital were graded as to distribution and degree of injury. When surgical intervention became necessary patients were evacuated. The remainder were treated according to precepts which have been discussed by Orr and Fainer. Patients were returned to duty with their units as soon as they were physically fit.

A total of 286 patents with cold injuries were admitted to this hospital between 3 December 1952 and 92 March 1953 Of these 986 patients 981 had frostbite that is actual freezing of the tissues resulting in local changes ranging from transient vaso motor phenomena to extensive necrosis. Five patients had trench foot that is deterioration of tissues caused by restriction of blood flow to the feet when exposed to moisture and cold

CRITERIA

Grading of intensity of involvement followed classical divisions (1) First-degree injury consists of transient vasomotor phenomena (i.e. ischemia followed by crythema and mild edemia) Subjective sensations such as numbness tingling itching burning and occasionally aching pain of the affected part are observed. These signs and symotoms disappear within one week (2) Second-degree injury is manifested by intensification of these signs and symptoms. It addition it is accompanied by the formation of vesicles that do not involve the entire thickness of the skin (3) Third degree injury shows involvement of the entire skin thickness and extense to varying depths into the subcutaneous tissues (4) Fourth degree injury produces damage to all tissues of the part, including bone and results in loss of the part.

Data pertaining to the winters of 1950 1951 and 1951 1959 were obtained from the preventive medicine division of the surgeon's office Eighth United States Army Korea Data per taining to the winter of 1957 1953 were obtained by analysis of hospital records at this hospital

DISTRIBUTION BY DECREE OF INJURY

Of about 5 000 patients observed during the winter of 1950 1951 the great majority had second and third-degree injuries but a considerable number showed fourth degree injuries (table 1) Severe involvement resulted in few amputations but prolonged hospitalizations Of the 1010 patients observed during the winter of 1951 195° only about one fourth had third- and fourth degree liquities. Thus with a great decrease in total incidence there was also a pronounced trend toward less severe involvement.

(table 1) Of the 286 patients with cold injuries admitted to the Cold Injury Treatment Center during the winter of 1952 1953, all most two thirds had first-degree and one fourth had second-degree injuries (table 1) The fact that the vast majority of these injuries were first and second degrees reflected great improvement in measures for the prevention of cold weather injuries

TABLE 1 Distribu on of patients with cold injuries by degree of involvement
(1951 to 1953)

Year		\uiber of					
	patie_ts	1	2	3	4		
1950-1951	5 000_	16-	33 6	43 6	6-1		
1951 1952	1 010	39-7	36-6	20 1	4.6		
1952 1953	286	62.3	27 0	96	LI		

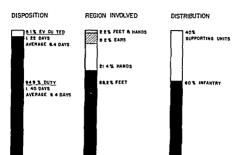
Observer at tu Col. Litry " eatmen. Center.

TABLE 2 Incidence of frostbite by month and deg ee of imolieren.

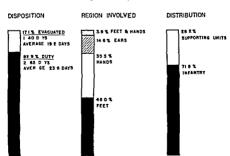
Mosth	Number of	Degree of involvement				
	patients	1	2	3	4	
December 1957	153	109	29	13	2	
J newy 1953	78	38	30	10	0	
February 1953	46	2~	16	1	0	
Jarch 1953	4	1	1	1	1	
T al	281	175	76	2*	3	

One of the factors involved was a well stabilized tactical situation permitting better housing and supply of troops as well as a core vigorous enforcement of reasures which each soldier could take to avoid becoming a cold weather casualty. These measures include the wearing of sufficient clothing to keep the body warm but at the same time to avoid overheating with resultant moisture due to perspiration, avoiding prolonged exposure of unprotected shin surfaces to extreme cold. Leaping the feet clean dry and as warm as possible and situalizing the circulation to the extremities by exercise or massage at frequent intervals and eliminating all it trictions which retard the circulation. In addition, one and in a commanding officers need to rake certain that sufficient clothing including special items such as the insulated rubber commat boot

developed by the Quartermaster Corps warming enclosures and clean dry socks are available to enable their personnel to carry out this program



Fgur 1 Statistic I d tibutes | 175 p tie t w th f t d gr | tbut duri g the nte / 1952-1953



Fgu 2 St t sucal dist but of 76 p tent with cond d gr fr thise during the u 1er / 1952 1953

REGION INVOLVED AND DISPOSITION

Table 2, a breakdown of degree of involvement by months during the winter, reveals that the greatest total incidence of all types of injury except that of the second degree was at its neak during the first month in which cold injuries occurred The de crease in incidence as the winter progressed may well have been due to an increased enforcement of cold weather discipline

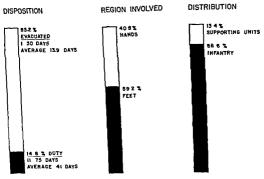


Figure 3 Statistical distribution of 27 pat nts with third degree frostbite during the u inter of 1952 1953

Figures 1 2 and 3 graphically present the final disposition the body region most severely involved, and distribution by activity of patients with first- second and third degree frostbite observed in the winter of 1952 1953 The term evacuation," as here em ployed means transfer to another medical installation for surgical intervention or for prolonged hospitalization. The term duty" indicates that it was possible to return these patients to their unit with a temporary "3 profile, pending re evaluation at a later date No exact data are available but it is our belief that patrol duty was the tactical activity which gave rise to the highest incidence of cold weather injury

Fortunately only three patients with fourth degree injury were observed, and all were evacuated for surgical treatment within two, 10 and 22 days

Seventy four patients were admitted to this hospital in the winter of 1952 1953 with the diagnosis of frostbite which was not substantiated Over 60 of these were classified as unconfirmed

frostbite and quickly returned to duty. The rest had miscellane ous conditions including Raynaud's syndrome acrocyanosis and skin affections due to improper use of cold-weather Lear Chiv three were transferred to psychiatric installations for evaluation of emotional aberrations motivating the formation of their symp tome

TREATMENT

The treatment of these patients was essentially conservative The basic plan for management included exposure of the affected part to air at room temperature control of secondary infection and prophylaxis against tetanus by a booster injection of tetanus tox old Vesicles were allowed to rupture spontaneously and debrided when necessary As soon as feasible rehabilitation by active and passive exercise was begun so that soldiers could teturn to duty with a minimum loss of time

CONCLUSIONS

The data herein presented demonstrate a tremendous decrease in incidence and severity of cold weather injuries in horea. Fac tors contributing to this change included tactical stabilization with attendant improvement in troop shelter and supply rigid cold weather discipline and use of improved cold weather gear de veloped by the Quartermaster Corps Con ervative methods of management resulted in return to duty with minimum time loss of the majority of the patients

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ACUTE RENAL FAILURE

We do n t yet k w with certai ty how th lesions f cute phros s are produc d nor ha e w cl ar und rst nd ng of the mechanism by which anur result. The p tient who delors acut renal f ilure i clearly in t te of ext em ly comple physiolog c derangement It s difficult (o pe hap impo ible) to r prod c thi stat ex ctly n speciment I nim I wh net bolic djustments my be m de in quite differ n way f mith of the hum n

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DIAGNOSIS AND MANAGEMENT OF EPILEPSY IN THE MILITARY SERVICE

RICHARD J MAHER L eutenant (MC) USNR

In THE diagnosis and management of epilepsy in the military setting certain factors such as motivation, evacuation of patients long distances for study, and eligibility for return to duty are of considerable import, and create problems usually not encountered by civilan physicians

DIAGNOSIS

The history should be elicited both from the patient and from those who witnessed his seizure. The patient should be question ed concerning aura, seizure, and postconvulsive phenomena. Fre quently the aura is either nonexistent or forgotten. There should be no recollection of the actual seizure. It is pertinent to establish this point carefully with service personnel, for if they remember details of their convulsions, they likely are having hysterical rather than epileptiform seizures. Often, feelings and actions during an hysterical fit can be described, but complete amnesia for an epileptiform seizure is typical. Postcon vulsive data may also provide diagnostic clues. Was the patient soiled when he awoke? Did he injure himself in any way? Were his muscles sore and stiff the next day?

The examiner should determine the alcoholic intake and the emotional status prior to the convulsion Alcohol lowers resistance to seizures, and its use often precedes the first convulsion in military personnel Less well appreciated is the tendency for emotional disturbance to trigger seizures Tension and anxiety do not seem as important in their production as do hostile and resentful feelings which the patient is unable to relieve For example, one of our patients was hospitalized because of sei zures that occurred three or four times a year. His attitude during hospitalization, which was against his wishes, was extremely immature and resentful because he was not allowed to return to duty. Whon military discipline forced him to face this reality, his response was to have two dozen seizures in less than a month Another patient though making an adequate service adjustment.

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had been smoldering inwardly for two weeks prior to his only seizure because his parents had refu ed to send him his savings to invest somewhat foolishly in a new car

A past history of head injury meningitis petit mal epilepsy or reneroal disease is important as is a family history of convulsions

Usually the most significant information is obtained from witnesses of the seizure. This is especially important in the military service because a patient may be hospitalized for study thousands of miles from the site of his convulsion and from eye witnesses. If the medical officer of the remote station or eye witnesses if the medical officer of the remote station or site preceds all pertinent information derived from a face to-face interview with an eyewitness he will perform what is porhaps the most important diagnostic study in the patients word up logicating the collection of this information is the most serious handicap in referral of patients hospitalized for study.

The physical examination is usually negative in idiopathic epilepsy It should be painstakingly performed however to rule out local neurologic signs crotid sinus sensitivity hypocal cemia and sources of brain emboli such as rheimatic heart discosse. Psychiatric evaluation is essential The irrnature hostid young druftee may well have hysterical solutes On the other hand convulsions occurring in a well adjusted person whose instery is free of enuresis poor school adjustement family divorce and alcoholism service disciplinary offenses and the like are more apt to be true opilepticor securiors.

Laboratory studies should include in all cases a lumbar puncture roentgenograms of the skull and an electroencephal ogram. The child with a febrile convulsion who does not have a lumbar puncture may return 24 hours later with unmistakable signs of meningitis. The adult in whom condegenograms of the skull are not made may have a meningioma that is obvious on coentgenographic studies. Regarding the electroencephalogram it is important to remember that a routine tracing without hyper ventilation metrazol and photic or other stimuli may be nog ative in epileps. Even with stimulation about 20 percent of epileptics will have negative electroencephalograms at the onset of their solutions.

MANAGEMENT

In the management of the acute seizure the physician has certain obligations

Prevention of injury to the patient.

- 2 Avoidance of panic among bystanders Witnesses should be assured that all is under control and should be dispersed after it is determined that they will be available later for questioning
- 3 Observation of the seizure and postconvulsive state Local ized seizure discharges may be manifested by deviation of the head to one side, onset of seizures on one side, and so on One should determine if the convulsion is hysterical in nature, son situity to pain, hyperventilation, bizarre and aggressive be havior, or quick recovery are usual concomitants of emotional fits
 - 4 Treatment of contributing factors, for example, in febrile convulsions and seizures secondary to acute nephritis, or toxemia of pregnancy
 - $\,\,^{5}$ Anticonvulsant medication. This need be given only to the patient in status epilepticus

LONG-TERM TREATMENT

Which patient should receive long term treatment? One seizure does not make this mandator, but the serviceman should be observed for further difficulty before a final diagnosis of epilepsy is made and long term treatment recommended. The drugs of choice for grand mal epilepsy are diphenylhydantoin sodium (dilantin sodium) and phenobribital. They may be given together if seizures are frequent. With infrequent seizures either drug can be started alone. Totic effects of diphenylhydantoin sodium include hirsuitism, gum changes, jastric irritation, dermatitis, and cerebellar signs yledication should be given after meals to avoid gastric difficulty. Daily gum massage is recommended. The skin and cerebellar signs will frequently clear up if medication is stopped for several days and then resumed.

An important point to remember with diphenylhydantoin sodium is that it has a cumulative action. For this reason it is not used alone for the emergency treatment of status epilepticus and doses omitted because of lorgetfulness during long term treatment should be made up. Phenobarbital, on the other hand, works rather quickly. It can be given at times of the day during which most patients are more susceptible to soziure, for example, at bedtime. It is probable that many epileptics can tolerate a moder are intake of alcohol, but complete abstinence is a safer course. Emotionally disturbing circumstances should be avoided if this is possible in our troubled era. Car driving, swimming alone, climbing heights, and other obviously dangerous activities are contraindicated. Treatment may be withdrawn slowly after three years of seizure free therapy.

A most important consideration in treatment is careful in doctrination of the patient in the rudiments of his disease. The physician should be both optimistic and realistic in his explanations. Much can be done by giving the patient literature suitable for lay consumption it is often helpful to introduce the patient to a well-controlled epileptic who has made an adequate emotion at adjustment to his discorder 1 long, term plan should be outlined to the patient making it clear to him that he must continue taking medication for years rather than for days or weeks. He should be encouraged to ventilate his feelings concerning his disease so that prejudices and undue fears can be allayed Patients are frequently relieved to find that deterioration in the well treated epileptic is uncommon and that the chances of his children developing epilepsy are slim if he marries a non epileptic

Many errors occur in the treatment of status epilepticus the most frequent of which is the repeated administration of large doses of barbiturates to the point of intoxication Recommended management is the intravenous administration of 0.2 gram of phenobarbital sodium repeated at 20-minute intervals for three doses if that fails ether by drop may be started it is in portant to treat contributing causes in status epilepticus, such as fever in febrile convulsions

Surgical treatment is mandatory in cases of brain tumor or subdural hematoma Surgical intervention may also be advisable in posttraumatic epilepsy if the diagnosis is supported by clinical electroencephalographic and air studies if seizures are focal and if a medical regimen has failed to control the soizures Operation should be considered only when there are excellent facilities available

What should be done about the epileptic in military service? It is best to adopt the rule that no epileptic should be retained in service. There will be occasional are instances however in which individualized exceptions can be made to this rule.

SUMMARY

In outlining the diagnosis and management of opilepsy several useful points of procedure have been emphasized including the careful questioning of eyewitnesses and recording of all pertinent data the distinguishing of conversion seizures in military per sonnel from true epileptiform seizures and the education of the patient in how to live with his disease

ABDOMINAL PREGNANCY

A Review and Case Report

HOWARD HORNER Captain, MC USA HAROLD E HARRISON Colonel MC USA

ABDOMINAL pregnancy is one of the most interesting but, unfortunately, one of the most hazardous complications of pregnancy although rare, it must be kept in mind, otherwise correct diagnosis will frequently be missed Torpin' stated that the presence of vaginal spotting and unexplained abdominal pain in a pregnant woman should suffice to put the clinician on guard and a pregnancy with these signs should be considered extra uterine unless proved otherwise

An abdominal pregnancy can be either primary or secondary, the latter being the usual 2 Studdiford reported a case of primary abdominal pregnancy in 1942 which was well documented A similar case reported by Bourgeois fulfilled the criteria of pri mary abdominal pregnancy as outlined by Best' however, most of the cases of abdominal pregnancy, Latzko's' opinion to the contrary are secondary to a tubal pregnancy which either rup tured or aborted spontaneously into the free peritoneal cavity? Usually after tubal rupture has occurred, there will not be a complete separation of the trophoblastic attachment, but rather a slow extension through the defect of the tubal wall with im plantation over the surrounding peritoneal or visceral surfaces Sometimes there is complete abortion of the ovum and de novo implantation. Only this mechanism can explain the remote locations where abdominal pregnancies have been found. One of the most unusual sites of an abdominal premancy, and the only one of its kind described in the literature, was in a patient, re ported by hushner and Dobrzynski, in whom the placenta in its entirety was attached to the spleen

The incidence of abdominal pregnancy has been variously quoted Cross and associates of Atlanta, Ga, reported 19 cases in 41,941 deliveries, or an incidence of one in 2,207 Boxen, of French Hospital New York, A 1, reported an incidence of one in 17,173 which concurs with Eastman's "figure of one in 15 000, Douglass and Kohn s" estimate of one in 16,000, and Quilliam's statumate of one in 12,500 Barrett" added five cases seen at Form M dis Aumy H pull I case f ab Dr Hue saw 1917 C siDr we Landsche Calif

the Decatur General Hospital in Decatur Ala to two cases previously reported by Burleson and Bragg' from the same institution making the unusual incidence of abdominal pregnancy at that hospital in the period from 1947 to 1952 of one in 286 deliveries

Because abdominal pregnancy is usually a sequela to a tubal pregnancy and because the incilence of extra uterine gestations is much more common in logroes it is not surprising to find late extra uterine gestations to occur predominantly in them According to Douglass and Kohn the incidence ratio of logro to white is 16 to one Bates and Nabors reported 107 extra uterine pregnancies including eight abdominal prognancies of which 76 f percent were in Negroes Hazlett reported a rare case of a repeated abdominal pregnancy in a young loggo patient who carried both pregnancies to term in contrist Lester and as sociates reported a second abdominal pregnancy in a white patient with an associated uterus bicornis unicollis Since the Fallopian tubes at laparotemy appeared relatively free of pathologic changes they believed this might possibly be a primary abdominal pregnancy.

It cannot be overemphasized that a carefully taken history is one of the most important diagnostic aids A thorough inter regation of the patient concerning the character of her last nor mal mensitual period comparing it with previous periods will reveal the fact that it actually was not a nornal period at all as the patient had presumed but was vaginal bleeding associated with an ectopic prognancy. This plus pelvic or lower abdominal pain which usually is the presenting compliant should put the clinician on the alert. Because there is considerable peritoneal irritation the patient will frequently consult the doctor for a multiplicity of vague compliants which at first might seem to have no relationship to the gestation in addition to abdominal pain the patient may complian of nausea and vomiting flatulence, constipation and diarrhea to a varying degree and urnary difficulties. Later in pregnancy (fatal movements may be very painful

On physical examination the finding of a definite displacement of the cervix is an important sign that the programcy is abnormal Other helpful findings are the presence of a high or transverse position of the fetus evidence of fetal death the presence of an extra uterine mass inability to billot the fetus failure of an extra uterine mass inability to billot the fetus failure of cervical effacement and dilatation episodes of spurious labor and assummetric abdominal enlargement. Vurless and associates believed that the status of the cervix with its high position and failure to efface and dilate with falso labor is of great significance. According to Cross and associates the other diagnostic criteria which are often reintioned but which have been of little

help to them in arriving at a correct diagnosis are the

help to them in arriving at a correct diagnosis are the following abdominal crisis early in pregnancy, palpation of superficial fetal parts, unusually loud fetal heart tones, inability to palpate the round ligaments, inability to palpate Braxton Hicks contractions and proof that the uterus is empty by probing, and, finally, by hysterograms

Lazard, on and Vilalta believed that the use of contrast media is of considerable aid in confirming the diagnosis once the clinician suspicion has been aroused. For this reason this procedure has been used in the patient to be reported.

Certain laboratory and diagnostic tests are of help Colvin and McCord22 described the use of pituitary extract to identify an abdominal mass as separate from the uterus A small amount of pituitary extract is injected subcutaneously while a bimanual examination is performed A firmly contracted and thus easily recognizable uterus will permit the identification of any other extra uterine abdominal tumor Although well conceived, in prac tice this test is not easily carried out Roentgenograms may reveal signs which may be of help in the diagnosis of abdominal pregnancy, although none are pathognomonic In the case to be presented the roentgenologic diagnosis was questionable. The following criteria are looked for (1) abnormal position of the fetus (2) presence of a pelvic mass, t e uterine shadow, (3) fetal parts visualized immediately beneath the abdominal wall. and (4) absence of uterine shadow around the fetus Frequently the latter finding is absent because the fetal sac usually has attained such thickness that on a roentgenogram it will commonly mimic the uterine outline about the fetus 25 Even with the most carefully taken history and physical examination, aided by labor atory studies, the condition was diagnosed correctly before oper ation in only 35 percent of the patients reviewed by Cornell and Lash 24

Fetal salvage in abdominal pregnancy is extremely poor In a review of abdominal pregnancies reported by Beacham and Beacham? in 1946 the fetal mortality was 85 percent Warer analyzed 247 cases of extra uterine pregnancy found in the liter ature from 1933 to 1946. There were 251 infants in his series, of whom 140 died undelivered and 50 within the immediate neonatal period giving a total fetal mortality of 75 6 percent Some in vestigators, such as von Winckel, Bland and Montgomery, and Eastman, also believed that these infants show a greater incidence of congenital malformations than normal intra uterine gestations. According to Mahfouz, however, the fetuses in his series that advanced to term showed little or no abnormality, whereas some of those that died at an early age showed marked

malformations There are occasional single case reports wherein an abdominal pregnancy terminated in a live child a fact which only serves to emphasize the rare occurrence of this out come

Tubal abortion usually results in an absorption of the fetus however once the fetus continues to grow as an abdominal preg nancy and reaches a certain size absorption does not occur but rather one of the following four alternates takes place (1) suppuration (2) mummification (3) calcification (4) adipocere form ation not taking into account the rare case that is delivered as a full term pregnancy alive or recently dead Because the gestation sac is in close contact with the intestines there is frequently penetration of the former by pyogenic organisms. The resulting suppuration causes abscess formation which may rupture intraperitoneally usually into the intestines or extraperitoneally through the abdominal wall In the case to be presented had laparotomy not been decided on perforation would surely have occurred through the abdominal wall Mummification and calci fication might have ensued the literature contains numerous instances of a lithopedion being retained from 20 to 30 years before it was ultimately found at operation or autopsy

Surgical intervention is the treatment of abdominal pregnancy, the only question being when to operate The prime reason for delay of operation is to decrease the amount of hemorrhage at time of definitive surgery Contraction and retraction of the uter ine musculature causes obliteration and occlusion of the large sinuses and hypertrophied blood vessels at the site of separation of a normally implanted uterine placenta. This mechanism is absent in abdominal pregnancy where nidation is on the bowel or other visceral organs Following fetal death however there is progressive diminution of the placental circulation with throm bosis and infarction and resultant decrease in vascularity and dan er of hemorrhage Therefore some surgeons believe that an operation should be delayed in the hope that massive hem orthages which so frequently occur at laparotomy might be pre vented Thus Champion and Tessitore believed that after the fetus is dead the operation should be delayed six to eight weeks until the placental circulation has atrophied DeLee suggested deferment for seven to "O days for the same reason and Lull postulated that if the patient's condition permits it three to four veeks should be allowed to elapse before laparotomy, always assuming the fetus is dead when the patient is first seen How ever Eastman Ware and others maintained that nothing can be gained by waiting and believed that surgical interference i indicated once the diagnosis is made Moreover Tonneau and Cross and associates pointed out that this delay might actually

panies that condition. In Ware's series of 13 late extra uterine pregnancies it was 30.76 percent and in the 249 cases he found in the literature since 1933 and which included his 13 cases it was 14.85 percent. Cornell and Lash reported a 14.3 percent material mortality rate half of which was due to shock alone Peritonitis intestinal obstruction tovemia pielonephritis and a miscellaneous group accounted for the other 50 percent. In Jarcho's series the death rate was 11 percent. Bland and Montgorery reported a 34.7 percent material mortality rate for 240 cases of late extra uterine pregnancy found in the literature from 1813 to 1907 while it dropped to 16.7 percent for 61 cases collected from 1907 to 1923.

CASE REPORT

A 30 year old Japanese woman, gravida 2 para 0 abortion 1 was admitted to the gynecologic service of this hospital on 30 October 1952 because of the presence of an intra abdominal mass

Present Illness The patient's last normal menstrual period was 8 September 1951 and her estimated date of confinement 15 June 1959 On 95 September 1951 the patient developed severe lower abdominal pains which were relieved by a shot given by a physician On 3 October 1951 a dilatation and curettage was performed without bleeding or removal of any products of conception (details unknown since records were not available) One week later the patient developed a foul vaginal discharge although she had been receiving 300 000 units of penicillin daily On 20 October 1951 treatment was begun by another physician The patient received fluids intravenously five blood trans fusions and penicilin She improved and during the next two months was examined every two weeks and was advised she still had the baby and that the pregnancy was progressing satis factorily She continued however to have frequert right-sided abdominal pains and occasional vaginal spotting By January 1952 there was no further vaginal bleeding but the patient com plained of frequent gastrointestinal disturbances In March 1950 she came to the United States She reported to an Army general hospital in 1952 and was followed in the prenatal clinic Ade quate records are available only from this time on On 10 May 1950 she developed severe pain in the left lower side of her abdomen with radiation to the right side She was told she had a kidney infection and was hospitalized for four days and was given fluids intravenously and antibiotics On 93 May she devel oped high fever" and severe lumbar pain and at this time noted no further fetal movements She was told the fetus was not alive and that she would have to wait for spontaneous onset of labor

There was some bleeding in June 1952, at which time roentgenograms confirmed fetal death. She was repeatedly informed that she must await spontaneous delivery and that no operation was indicated. On 26 September 1952 she started a normal period which lasted five days and then had another normal period on 26 October 1952. In October 1952 the patient's husband was transferred to the Pacific Northwest and the patient came to this hospital for evaluation.

Past History The patient had been pregnant three years before the present pregnancy, but had aborted at four months. She had six blood transfusions in November 1950 because of vaginal bleeding. The entire history is not reliable because of the lan guage barrier and inability to obtain old records.

Physical Examination General physical examination findings were within normal limits, revealing a well-developed, well nourished woman in no acute distress. The abdomen was enlarged by a tumor mass the size of a seven months' gestation No fetal activity could be elicited and fetal heart tones were not audible The mass was semisolid and only one fetal part was palpable The external genitalia was normal and Bartholin and Skenes' glands were not palpable. The vagina contained a red brown mucus. The cervix had a stellate laceration with evidence of a chronic cervicitis, but it was not displaced The uterus was difficult to palpate, but was thought to be lying immediately anterior to the cervix, anteflexed against the anterior vaginal wall It was about one and one half times the normal size and fixed in position A large, fixed tumor mass seemed to arise from the right adnexa and was compatible in size with a preg nancy of seven months Neither ovary could be felt The im pression on admission was that the patient had an extra uterine pregnancy with fetal death and possible mummification or calcu fication of the fetus It was postulated that the September 1951 episode represented rupture of an ectopic tubal pregnancy with secondary implantation of the placents and continued fetal growth to a period of seven months gestation, then fetal death and culmination in the present nicture

Laboratory Studies Routine laboratory determinations were found to be within normal limits except for an elevated crythrocyte sedimentation rate Roontgenograms of the abdomen revealed a fetus, but it was thought to be intra uterine A gastrontostinal series was noncontributory Because of the strong clinical impression of an abdominal pregnancy, a hysterosal pingogram was done on 5 November with great difficulty, producing severe pain when the dye was injected Review of the films was not conclusive, but they were interpreted as probably showing an extra uterine pregnancy. The patient developed a

reaction to the dye used It responded to the administration of epinophrine and diphenhydramine hydrochloride (benadryl hydrochloride)

Course in the Hospital Following the laboratory procedures outlined above the patient developed a severe infection of the products of gestation beginning on 6 November 1952 with temper attree spiking to 101 to 102 for the next 14 days Blood cervical urine and stool cultures were all negative for patho,ens. The patient was maintained on massive doses of antibiotics. Here condition however became progressively worse with increased toxicity and on 18 November 1952 a tender indurated mass, which had increased in size and was thought to be an abscess was felt beneath the umbilicus. Roentgenograms revealed gas about the fotus. The patient was seen in consultation and it was be inveed that she had a ruptured uterus with development of an intra uterine abscess. On 18 November 1959 under spinal anes thesis an exploratory laparotomy was done.

An infected pregnancy within an abscess cavity was found Because of marked adhesions necrosis and inflammatory re action it could not be absolutely determined at operation whether the uterus was separate from this mass or simply involved by contiguity The abscess wall was found to be adherent to the right anterior abdominal wall appendix cecum transverse colon sigmoid and descending colon The adhesions were freed with considerable difficulty after the mass itself had ruptured and about 1 000 cc of foul gray pus evacuated The fetus was found to be macerated and was removed separately with great technical difficulty a total historectomy and right salpingo-cophorectomy was performed The vaginal cuff was left open for drainage The patient received 2 000 cc of whole blood during the operation and 1 000 cc of dextrose A careful dissection of the surgical specimen confirmed the original clinical impression of an abdominal pregnancy probably secondary to a tubal abortion with placental implantation on the fimbriated end of the Fallopian tuhe

PATHOLOGY REPORT

Gross Pathologic Examination The apecimen consisted of a uterus cervix tube, overy and a fetus The cervix measured four contimeters in length and averaged 2.7 contimeters in diameter. The smooth epithelium of the external portion of the cervix was present in one area.

The recognized portions of the uterus measured 6 by 7 by 4 5 centimeters. Attached to the uterus was a very large sacculation and it could not be determined whether this large sacculation which measured about 90 centimeters in length by 18 centimeters.

in diameter, represented a part of an abnormally formed uterus or a greatly dilated Fallopian tube. The endometrial cavity showed no abnormal communications and the endometrium was relatively inactive, averaging 3 mm in thickness. The serosal surface of the uterus and this sacculation showed many fibrous adhesions. The sacculation housed a fetus, fibrinated material, and a placenta.

What apparently was a Fallopian tube was recognized on the external walls of the sacculation. It measured 11 centimeters in length, up to one centimeter in diameter and the lumen was probed. Its fibrinated extremity was not recognized and a communication between this tube and the sacculation was not recognized.

An ovary, 45 by 3 by 15 centimeters in dimension, was situ ated in the wall of the sacculation its cut surface showed old corpora lutea and tiny noncestic structures. The sacculation proper had a fibrous type wall, and the interior was ragged and covered with fibrinous purulent evidate. The placenta, of an estimated diameter of 13 centimeters, varied in thickness up to 3 centimeters, and was very degenerated.

The fetus was that of a female measuring 40 centimeters from crown to heel and 28 centimeters from crown to rump A macer ated portion of cord attached to umbilicus measured 33 centimeters. The maceration was extreme and sections were not taken

Microscopic Examination The sacculation showed smooth muscle layered in two planes with the cells oriented at 90 to each other from one plane to another One area showed a small span of columnar epithelium where fibrosis and exudate had not obliterated detail There was much infiltration with plasma cells and lymphocytes and the bulk of the lining surface was necrotic An area of luternized stroma was noted This stroma was not remarkable except for one area which abutted on the lining of the sacculation, and here fibrosis and exudate, as noted above. were present The section of the body of the uterus showed the endometrium to be relatively shallow, the stroma compact and the glands relatively straight and lined by simple columnar en thelium with little evidence of secretory activity Decidual cells were not present. The myometrium and serosa were not remarkable in these sections The sections of the Fallopian tube showed considerable exudate of plasma cells and lympho cytes in the stroma under the low columnar epithelium lining the tube The musculature of the tube was somewhat infiltrated as was the serosa to a lesser extent Cervical sections showed an essentially normal appearing stratified squamous epithelium and columnar epithelium. The glands likewise were not remark able The stroma was infiltrated with lymphocytes, especially

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under the epithelial surface and about the glands. The placenta was necrotic hyalinized and infiltrated with polymorphonuclear loubovetes. lymphocytes and plasma cells. Decidual cells were not recognized The sections of round ligament depicted a normal appearing structure.

The diagnosis was extra uterine infected pregnancy on the Fallopian tube fimbriated extremity chronic salpingitis chronic opphoritis chronic cervicitis

POSTOPERATIVE COURSE

The patient's immediate general postoperative condition was remarkably good. She was given streptomycin penicillin fluids intravenously and continuous gastrointestinal decompression using a Miller Abbott tube with Wangensteen suction On 27 hovember 1952 (ninth postoperative day) the nasal end of the tube was inadvertently cut before the tube had passed the large bowel. Although it was anticipated that the tube would pass spontaneously per rectum there was no progression for the next 48 hours as evidenced by roentgenograms Instead the patient developed a partial intermittent intestinal obstruction secondary to a colling up of the Miller Abbott tube and on '9 November another laparotomy was performed The coiled tube was found in a loop of the ileum which was distended proximal to the point of obstruction.

The patient tolerated the operation well and was returned to the ward in good condition. She was given penicillin but developed a generalized urticaria and the penicillin was di con tinued She was then given oxytetracycline (terramycin) intra venously Decompression was accomplished by a second Miller Abbott tube which was left in for ix days After removal of the tube normal bowel function returned and she tolerated oral feed ings well. She developed multiple superficial wound abscesses which had to be opened After packing of the wound with plasma oxytetracycline paste satisfactory granulation developed She was discharged on 5 January 1953 asymptomatic and feeling well the abdominal wound showing almost complete granulation Pelvic examination before discharge disclosed the vaginal vault to be granulating well A large indurated mass was felt extending from the cuff to the night lateral polyic wall. When seen in the clinic three week later there was considerable resolution of this area of induration and much less tendemess

SUMMARY

Abdominal pregnancies can be either primary or secondary most are secondary, and are usually a sequela of tubal prenancy. The majority of abdominal pregnancies are observed in Negro patients. Clinical aids in diagnosing this ondition include a carefully taken history, evidence of vaginal bleeding and pelvic pain, displacement of the cervix, and the presence of an extra uterine mass. The pituitary extract test and roentgenograms are also of use in diagnosis

Maternal mortality in abdominal pregnancy is reported to be from 15 to 30 percent and fetal mortality from 75 to 85 percent. Surgical intervention is the treatment of this condition, but be cause of the dangers of massive hemorrhage the optimum time for operation is a matter of controversy

In the patient presented herein, an exploratory laparotomy about 14 months after conception and about six months after death of the fetus revealed an infected pregnancy within an abscess cavity. Because the maceration of the products of conception had involved the uterus cervix, and right tube and ovary, total hysterectomy and right salpingo-oophorectomy were performed We believe that this is a case of rupture of an ectopic tubal pregnancy with secondary implantation of the placen ta and continued fetal growth to a seven months gestation then fetal death

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MITRAL COMMISSUROTOMY

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B LAND' credited Billroth with the sage observation in 1883, let no man who hopes to refer the control of the c brethren dare to operate on the human heart " Yet as early as 1876 Klebs' had demonstrated an approach to the mitral valve in animals, and Rehn 1 not heeding Billroth's advice, success fully sutured a wound of the heart in 1897 The turn of the cen tury saw a slow steady development of interest in cardiac sur gery Brunton in 1902 suggested but did not use the present-day approach to the mitral valve. This suggestion brought severe criticism from his colleagues McCallum and McClune' in 1906 took the mitral problem to the laboratory and attempted to produce mitral stenosis and insufficiency in animals. Cushing and Branche in 1908 reported experimental work on chronic valvular lesions and discussed the relation of their experience to further valvular surgery Bernheim and Schepelmann described their animal experiments in mitral valve surgery in 1912 Doyen' in 1913 performed the first transventricular pulmonary valvulotomy on a 20 year old woman who died several hours after the opera tion This same year Tuffier o dilated the pulmonary valve through an invaginated pulmonary artery. This patient survived 10 years and was considered improved following the operation

Cutler and Levine in 1923 passed a tenotome through the left ventricle and attempted to incise the mitral valve cusps This patient survived four and one half years, and at death an autopsy revealed that the diameter of the mitral valve was 4 cm This first successful valvulotomy had increased the valvular diameter, but the principles described by Brunton had not been followed In the light of present knowledge it must be assumed that this patient undoubtedly had a postvalvulotomy mitral in sufficiency Souttariz in 1925 approached the mitral valve with the finger through the left auricular appendage. The patient sur vived but Souttar's colleagues were not impressed by the procedure and did not send him more patients for treatment In all. 10 patients with mitral stenosis were subjected to operation in the third decade of the twentieth century with a discouraging mortality rate of 80 percent

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After experimental studies, Bailey¹¹ in 1945 did a transappen dicular mitral valvulotomy dividing the commission with a valvu lotome. Although this patient did not survivo a successful val vulotomy was reported by Harken and others in 1948.

An alternate method of attack on the problem of mitral stenosis was suggested by Bland and others in 1918. This method rade use of a shunt between the azygos voin and the cardiac end of one of the right pulmonary voins. Such a shunt routin, blood from the pulmonary to the systemic circuit produced a relief of the pulmonary hypertension.

In more recent years mittal valve surger, has moved into a place of acceptance. Even though the lon, term results cannot yet be determined the early response is most favorable and offers a salvation to many cardiac cripples suffering the consequences of mittal steposis.

This report covers 50 patients who received surgical treatment for rheumatic mitral disease at this hospital during the years 1951 to 1954 Two operations were performed in 1951 12 in 1957 and the romaining 36 in 1953 and the first three months of 1954

SELECTION OF PATIENTS

The preoperative study and evaluation of patients in this report have been carried out by the cardiology section. Patients with mitral stenosis are grouped in four classes according to function al canacity.

Class I Auscultatory evidence of mittal stenosis exists but the patient presents no symptoms of the disease

Class II The patient is symptomatic but is able to carry on normal activities with minor limitations and there is no subjective evidence of progression of the disease

Class III The symptoms are progressive There is moderate to marked limitation of activity Auricular fibrillation hemoptysis and episodes of acute pulmonary congestion may or may not have occurred These patients show a limited response to cardiac drugs and bed rest

Class IV The patient is severely incapacitated bedridden with marked symptoms Chronic heart failure is usually well established

Such a classification corresponds very closely to that used by the American Heart Association as well as by Harken and associates

The cardiology section of the hospital assumed an active role in the management of the patients during operations and the im-

mediate postoperative period A continuous electrocardiogram made during the operative procedure guided the emergency administration of indicated drugs. The long term follow up and final evaluation of mitral valve surgery was determined by the cardiologists.

Because the mortality rate associated with mitral commis surotomy is directly related to the severity of the disease as indicated by the patient's classification, an increased mortality rate was anticipated in any series in which a large number of class IV patients receive surgical treatment. Janton and as sociates' reported a mortality rate of 5.8 percent in 274 patients. Harken and others found a mortality of 20 percent in class IV patients with an over all mortality of three percent in the other classes. Gerbode and others' recorded five deaths in a series of 44 patients, a 11.3 percent mortality rate Julian and co-workers' noted five deaths in 42 patients undergoing mitral valvulotomy, a 12 percent mortality rate. Griffith and associates' reported nine deaths in 126 patients a mortality rate of seven percent and emphasized that only class III and some class IV patients should be selected for operation.

Thirty five of the patients reported in our series were in class III 12 were in class II, and the remaining three in class IV We have not intentionally avoided surgical intervention in class IV. but only three patients of this type presented themselves for treatment. No definite correlation was found between the functional classification and the existence of a past history of rheu ratic fever Twenty six patients had had a history of rheumatic fever and in nine others this was questionable. Of the 50 patients in this series, 39 were women. The comparative dearth of men in this series is accounted for by the fact that mitral heart dis ease ordinarily disqualifies men for active military service, and because it is usually detected during physical examination at the time of induction, fewer men present themselves later for treatment of this disease Three patients were 18 to 20 years of age, 21, 20 to 30 years 18, 30 to 40 years, and eight were 40 to 46 years of age This age distribution is consistent with that reported in larger series, indicating that the gradual progression of stenosis produces disability most frequently in the third and fourth decades of life

DIAGNOSIS AND TREATMENT

Preoperative diagnoses made in 37 patients were confirmed by the surgeon, and demonstrate the accuracy of the diagnosis of a pure type stenosis (table 1) The confirmation of six of 13 preop erative diagnoses of mittal stenosis with insufficiency gives some indication of the difficulty of determining the major factor 196

in those patients with findings of both stenosis and insufficiently. It is also significant that in nine patients presumed to have other valvular involvement in addition to mittal stenosis the surject could confirm the militplicity of valvo lesions in only three patients. This also points out the limitations of present diagnostic technics in making a complete accurate diagnosis in acquired heart disease. Certainly those patients with multiple technics sine should not be denied the benefits of exploration. In those instances where nortic stenosis was diagnosed in combination with mittal stenosis the former lesion was found to be absent or minimal, and in no case was it believed that nortic valvo surgery was indicated.

TARLEL D .

TABLE 1 D g							
Diag	P pera	C f m d by urg					
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As shown in table 2 4° (64 percent) of the patients had definitive valvular surgery of this group 2 8 percent were successfully treated by the finger fracture technic Three patients required the use of a valvulotome to relieve the stenosis one of these three patients developed regurgitation to a rather marked degree the other two patients have shown continued improvement.

Cardine exploration in three patients disclosed a marked de gree of nontemediable regurgitation. Thoracotomy with cardine palpation was carried out in five patients in four of these the left atrium was occluded by throrbus and in each instance the naricular appendage was too small to admit a finger into the heart. The use of alternate routes either through the anterior atrial wall or the pulmonary vein were contraindicated by the presence of an atrial throrbus. One of the patients went into shock shortly after the pleural cavity was opened and did not respond to resuscitative measures. The chest was humiedly closed without opening the portcardium. This patients post-operative course was progressively downhill with the development of heart failure. Unit absects and empyrea. Death occurred on the thirty third postoperative day. Currently, we believe this death could possibly have been acided hid the stonesis been relieved. We do not consider hypotension during, the course

of operation a specific contraindication to correction of the stenosis

Microscopic study was carried out on tissue from 30 lung biopsies and on 32 auricular appendage specimens Twenty one of the 30 lung specimens revealed a recognizable degree of pul monary arteriosclerosis which in 14 instances was considered marked This suggests that changes occur in the pulmonary vas cular tree in response to the persistent increasing pulmonary hypertension existing even in moderately advanced mitral steno sis This is in disagreement with the observations published by Graham and associates²⁰ in which they concluded pulmonary changes existed only in severe degrees of stenosis

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TABLE 2 Ope atme results

Active carditis was reported in 14 of the 32 auricular speci mens This is of uncertain significance when it is realized that active carditis was clinically manifested in only two patients following operation

Mild failure occurred in three patients, and mild embolic phe nomena were recognized in three patients. In two patients with previous history of psychiatric difficulty, postoperative depres sion occurred early but responded to psychiatric treatment

CASE REPORTS

Case 1 This 23 year old woman first developed dyspnea in the last trimester of her first pregnancy She was treated by bed rest and had an uneventful delivery For the next five years the patient was given small does of digitalis There was an in crease in dyspnea and ankle edema with each menstrual period These symptoms usually appeared midway in the menstrual cycle and disappeared with the onset of the menstrual flow. No specific history of rheumatic fever was obtained

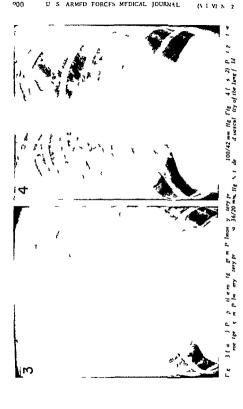
In January 1952, when the patient was 28 years old, a physical examination revealed her to be well developed and in no acute distress. There was rederate distention of necl veins. Her face was elightly cynnotic when she was in a reclining position. There was a loud presystolic rumur at the apex of the heart, and an opening snap with a loud diastolic rumur was noted. The pul monry second sound was accentuated and a diastolic murmur was heard in the pulmonary area. The liver edge was pulpible two fingerbreadths below the right costal margin.

A roentgonographic examination revealed the heart to be en larged about 30 percent (fig. 1). The enlargement was predominantly in the left auricle and right ventricle. No calcification of the mitral valve was visible on fluoroscopy. An electrobardio gram showed deformed T waves suggesting auricular disease with right axis deviation. The PR interval was 0.24 second. A cardiac catheterization on 14 January 1952 revealed pulmonary artery pressure of 100/55 and right ventricle pressure of 100/13. 25 mm. Hg. A diagnosis of mitral stenosis was made.

On 31 January 1952, finger fracture valvulotomy was performed. The postoperative course was uneventful and the patient was discharged from the hospital on the thirty sixth nostoperative day. She was given digoxin throughout the postoperative course, and in November 1952 she resurred normal activity. A room genogram at this time revealed decrease in the cardiac shadow (fig. 2). A cardiac catheterization revealed pulmonary capillary pressure, 11 to 12 mm. Hg. left pulmonary artery, 39/19, right ventricle 38/0 3 and right auricle, 5/2 5 mm. Hg.

Case 2 This 18 year old white woman developed dysphea and easy fatigability during childhood At 13 years of age, following an episode of schoope and epistaxis a heart murnur was found by her family physician. At this time the patient was treated with oxygen, digitalis, and bed rest, and some improvement was noted Progression of the dysphea was observed during the next five years and there were several episodes of congestive failure. Two years prior to admission to this hospital the patient had been given digitalis continuously but this did not control the increasing frequency of severe attacks of nocturnal dysphea Intermittent hemophysis developed in June 19.92 She was evaluated at this hospital at that time, but her general condition was poor and the question of rheumatic activity caused the cridiologists to defer operation. No specific history of rheumatic fever was obtained.

A physical examination on 10 October 1959 revealed a pale and apathetic patient with a blood pressure of 102/60 mm Hg and a forceful recorded heave A destable that well and the control of the control o



pated at the apex of the heart and a grade II diastolic murmur, ending in a loud snapping first mitral sound, was heard at the apex. The second pulmonic sound was accentuated and there was a grade II systolic murmur along the left sternal border A grade I apical systolic murmur could be heard. A roentgenogram revealed cardiac enlargement (fig. 3) The liver was not pall pable and there was no peripheral edema.

Cardiac catheterization on 14 October 1952 revealed the right pulmonary artery pressure to be 100/42 right ventricle pressure, 95/10 2, and right auricle pressure, 9/0 2 mm Hg Bed rost, lows salt diet, and 0.1 gram of digitalis leaf per day were continued 0.0 13 November 1952 a mitral valvulotomy was performed. The postoperative course was stormy and pulmonary infarction developed 24 hours after operation. The patient responded to antibutes and bishydroxycoumarin (dicumrati) over a period of five days, but convalescence was slow A followup cardiac catheterization on 17 December 1953 revealed the pulmonary capillary pressure to be 11/5, main pulmonary artery pressure, 36/20 (after three minutes' exercise, 60/36, after five minutes' exercise, 42/24) right ventricle pressure, 45/0, and right auricle pressure, 5/0 mm Hg. The patient had gained weight and toler ated normal activity. A roentgenogram at this time revealed a decrease in the size of the cardiac shadow (fig. 4)

SURGICAL CONSIDERATIONS

The current popular technics used in mitral commissurotomy are based on the principle as originally described by Brunton, using the linger fracture method through the left auricular appendigs. A few of our patients required incision of the commissures with a valvulotome it is not the purpose of this article to describe the operative technic, but we believe that certain points need emphasis.

- 1 The posterolatetal approach petmits wider exposure and therefore a greater margin of safety because adequate room is available for the control of hemorrhage if operative accidents should occur
- 2 A flush maneuver is used to evacuate clots from the awricle and attrum prior to finger exploration. This eliminates the possibility of a clot being pushed through the valve and the dependence upon carotid occlusion to attest its progress. We have encountered several old clots of walnut size which were removed by flushing
- 3 The proximity of the left cotonary artery and its circumflex branch to the site of surgical entry into the heart place these vessels in constant jeopardy. Any clamping in the presence of hemorrhage may result in interparable damage to the cotonary circulation. On three occasions in this series, severe hemorrhage resoluted.

by

the aur cle. In each inst nee hemorrhage w s r adily on trolled by fi ger pressure until a clamp could be applied or a hemostatic suture placed und r direct yision.

- 4 The performance of valudotomy in patients with regurgitation was dependent upon the plubblity of the anterior val e leaflet and the chord eitendineae. This is predict ted on the belief that the part all opining of a stenosed commissure in the prese ce of a plubble lefter and chord e will tend inpart to allevit the regurgitation. Postoperative results is emit or stiff with supercach.
- 5 Shock ppearing at the time the intrac cdiac manip I tion 1 about to be performed hould not contrandicate furth r urgery. When shock ppeas t this critical point in the operation valudar stin si un doubtly logadize the pitient see very from t. We believe t wise to complete the valudoromy in these instance s.
- 6 Various card ac arrhyth is he been noted during cirdle calpation bit a er latively infright in digit lized pitents. The us alpation bit ac er latively infright to discount to the opening of the heart
- 7 We have accepted massive of t filling the atri m as a contraindic tio for cardiac surgery

CONCLUSIONS

Commissurotom is now an accepted technic in the treatment of mitral stenosis. The immediate results are satisfactory in the majority of patients. Regurgitation is not necessarily a contrain dication to exploration of the stenosed mitral valve because a pliable anterior cusp when mobilized by commissurotom, majorited the complexity of the stenosed mitral stenosis may be indicated in some patients with multiple valve lesions. Actual sharp division of the commissures is necessary in only a small percentage of patients. The complications of mitral surgery are predictable and are those usually associated with rhoumatic heart disease. In this article we present our experience in 50 patients. A mortality rate of two percent places this type of cardiac surgery well within the realm of safety.

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THE PROFESSION OF MEDICINE

Medicine knows no race creed or color but only the sacred ass of human life. May it always be the servant of all but the hineling of note Greatness of the profession will remain as long as we look a the life of man through the clear light of service and not through the clear light of service and not through the convex better opportunity for growth in noral and emical acres for convex better opportunity for growth in noral and emical acres for convex button to the welfare of society and for the result for the convex suffering. I believe that no profession per nice are of the race at the suffering I believe that no profession per nice the race of society the goals of kind and love the suffering I believe that no profession per nice the race of the suffering is the suffering that the suffering suffering the suffering that the suffering that the suffering the suffering that the

- INTELLATION SECTION OF A

CARIES SYMMETRY AND GINGIVITIS IN MILITARY WOMEN

A Study of 243 WAVES

LAURENCE M STEIN D ! ! T b G ! 1b de! USYR
WILLIAM J CARTER L ! na ! (DC) USYR
HAROLD R ENGLANDER L ! na ! (DC) USYR

UMEROUS reports have appeared in the literature on the epidemiology of dental caries and gingivitis ³ They have been primarily concerned with the incidence of these conditions in men or a comparison of such conditions between men and women These reports were mainly from age and popula tion groups of grammar school or early college levels. This article presents information on the occurrence of dental caries and gingivitis in women in the military service. The rate of bilateral occurrence has been included in this report to show the conformity with similar studies ³

METHODS AND MATERIALS

In the fall and winter 19-1 1952 243 women (WAVES) at the Naval Training Center Great Lakes Ill volunteered to participate in a study involving the topical application of sodium fluoride. The majority of these women were from states east of the Mississippi River but a few came from the remaining states and outlying possessions. Their ages ranged from 18 to 44 years with an average of 22.4 years. Daily working eating and sleeping habits were fairly uniform. The results reported here were taken from the files recorded on the initial examination before the fluoride was applied topically.

All dental and gingival examinations were made with a mouth mirror and explorer under excellent lighting conditions. The gingivae were assessed without the aid of air gauze drying or by the use of pressure on the tissue as recommended by some in vestigators. The same examiner performed both examinations on all of the subjects studied. A full mouth roentgenogram plus four posterior bitevings were taken on each person and diagnosed by the examiner to supplement the findings of the clinical examination.

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The dental caries incidence and past caries experience were determined by a modification of the method described by Alein and associates. The results permitted the scoring of decayed, missing, and filled teeth (DMF) and also tooth surfaces. For purposes of this investigation, third molars and unerupted teeth were not included. The clinical and roentgenographic information was recorded on a revised public health code sheet which per mitted additional security to the study against bias. Another clinician, independent of the study, reviewed the roentgenograms for purposes of locating all carnous lessons.

The condition of the gingivae was noted and recorded by the method described by Massler and co-workers. Separate shoets were used so that gingivitis could be tabulated on the top half of the sheet and gingival recession on the bottom half. Due to the loss of individual forms between the time of examination and reporting, only 135 cases are included in this category.

The material for the bilateral symmetry study was taken from the dental records after they had been corrected and correlated with the roentgenographic lindings. The percentage of bilaterally occurring caries was noted for each pair of teeth. In this case, caries was considered nresent in the tooth if there was a lesion, a filling, or if a tooth was missing. This observed frequency of bilateral caries was compared to the expected frequency of bilateral caries based on the theory of mutually independent events.

This theorem of probability can be stated as follows. If two or more events are mutually independent so that the occurrence of one does not influence the occurrence of the others, the probability of all occurring is the product of their separate probabilities. To illustrate this further, in tossing one penny, the probability of tossing a head is 0.5. The probability of getting three heads when three coins are tossed at once is 0.5 \times 0.5 \times 0.5 or 0.125 $^{\circ}$,

This identical technic can be applied to the caries experience of teeth. In our study 243 women were examined. As shown in table 1, of 243 pairs of maxillary first molars examined, 210 were both carious 14 right only were carious, 10 left only were carious, and nine pairs showed no caries. The percentage of carious right maxillary first molars was therefore 92 2 (210 + 14 224 - 245 - 0 999). Similarly the percentage of carious left maxillary first molars was 90 5 (210 + 10 - 220 - 243 - 0 905). Following the example of the pennies, the product of these two percentages 92 2 and 90 5, will give the expected frequency with which both right and left molars should be carious in the same mouth, in other words the probability of getting

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bilateral caries if only factors of chance were in operation By calculation this expected frequency is 0 992 × 0 905 - 83 4 percent.

The actual experience or observed frequency of bilateral caries however was 864 percent (210 ~ 243 - 0864) For de termining the significance of the difference between the expected frequency of 834 percent and the observed frequency of 864 percent, the chi square (\frac{1}{2}) method was used based on the expected number of carious and noncanous teeth

RESULTS

The dental caries rates of 243 WAVES are recorded in table 2 There was a range of six to 40 DNF units per person (attacked by caries) with a mean of 22 3 units. The number of decayed, missing, and filled surfaces averaged 50 8 per person for the group with a range of 11 to 114. The average number of open carious lesions per person was 67, with a range of zero to 22 There was an average of 49 missing teeth per person and 04 impacted teeth.

TABLE 2 Rates f unt and surfaces of d cayed m ssing o filled teetb n 243 WAVES

11 249 WAY ES								
DMF	WAVES	Percent	DMF surfa e	WAVES	Perc nt			
6-10	16	66	11 20	9	3 7			
11 15	24	99	21 30	27	11 1			
16-20	51	21 0	31 10	29	119			
21 25	65	26.7	41 50	59	24 2			
26-30	60	24 7	51 60	50	20 6			
31 35	19	7 8	61 70	33	13 6			
36-40	8	3 3	71 80	16	6.0			
]	81 90	11	4.5			
			91 100	7	29			
			101 110	1	04			
	1		111 114	1	04			
Total	243			243				

M n DMF umrs = 22 32 per person

M n DMF surfac s = 50 85 per per on

COMPARISON OF ORAL CALCULUS DEPOSITION IN SHIP AND SHORE BASED PERSONNEL

PHILLIP J BOYNE L t na t (DC) USA

ALTHOUGH there have been many epidemiologic studies of dental caries few observations of the rates of calculus formation in large population groups have been reported A controlled experiment involving the observation of large segments of the population living under different conditions and under various dietary regimens could conceivably be of assistance in indicating the probable causes of oral calculus

The purpose of this study was to compare the amount of cal culus formed in personnel in the naval service living aboard ship with that in a like group of personnel stationed at a shore instal lation. It was believed that if the results of this observation should prove to be significant the work could possibly be used as a pilot study for future observations of a greater number of patients.

No single factor can be regarded as paramount in the process of calculus deposition rather there is an intricate interdepen dence of many physical and chemical activities which brings about the precipitation of calcium salts from the saliva and the deposition of these salts on the surfaces of the teeth

In general those processes which may be associated with the formation of calculus are divided into two groups (1) Those reactions concerned with the actual physicoclemical precipitation of the inorganic salivary salts from the saliva and (2) those processes related to the formation of an organic matrix to which the precipitated calcium salts may adhere

Because the main inorganic constituent of calculus is Ca (PO) it could be postulated that the concentrations of calcium and phosphates in the saliva are related to the tendency of the saliva to form calculus Tenenbaum and Karshan 'noted this relationship and found that the calcium content of the saliva of patients exhibiting no oral calculus was significantly lower than that of patients presenting marked calculus forms

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tion Gurney and Huschart' found that the ingestion of Ca, (PO,), could influence the calculus forming components in the saliva

It has been suggested by 'lapp' that the saliva of certain patients tends to be oversaturated with respect to calcium and phosphate so that these elements may be easily separated from the solution and deposited upon the teeth as oral calculus. This oversaturation is closely connected with the amount of calcium secreted and excreted by way of the salivary glands. One of the factors determining the output of salivary calcium is the calcium intake of the body.

It is, therefore not unreasonable to assume that the amount of calcium ingested in the diet might be a factor in determining whether or not certain persons will remain free of oral calculus Because few, if any, communities maintain a water supply in which calcium ions are completely absent, a unique opportunity to observe a group in which this factor has been controlled exists aboard ship where only distilled water is used for drinking and cooking purposes. It was believed that a comparison of such a shipboard group with a like shore based group would be of in terest in indicating the effect, if any of this regimen on the for mation of oral calculus.

METHOD

The calculus forming tendencies of a group of 75 men living on board a ship (U S S Yellowstone) and using only distilled nater were compared with a group of 50 men stationed at the National Naval Medical Center All of the subjects were of the white race, and the ages of both groups ranged from 20 to 30 years with a median age of 23 years. Only patients free from periodontal disease, gingival inflammation, and gross maloc clusions were accepted for the study Patients of both groups were re examined six to eight months after a complete scaling Only patients presenting some degree of supragingival formation of calculus at the time of the initial examination and scaling were accepted for the study groups. All the subjects gave his tories of having received scalings "routinely" (every six to 12 months) during the past two years. In this way, it was possible to exclude from the study those persons who remain almost en tirely free of calculus. The median time between the scaling and the examination (table 1) was seven months for the shore-based group and six and one-half months for the shipboard group

Although generally speaking the diet available to the shore-based group and the food served aboard ship were similar in respect to mineral content, it was impossible to control rigidly the dietary regimen because those in the shipboard group were able to subsist ashore during liberty hours while in port.

In view of the uncontrollable factors involved it is not possible to indicate that the calcium content of the water supply was alone responsible for the significant difference in calculus deposition noted

CONCLUSIONS

It would appear on the basis of this study that shipboard personnel are exposed to certain factors which are not conducive to calculus formation. The determination of the exact nature of these factors would require a more complex and more highly supervised and controlled study on larger groups of personnel

Salivary analysis of large groups of patients on various dietary regimens and using both distilled and hard water supplies could concervably be of aid in evaluating the underlying predisposing factors

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THE TOO BUSY PRACTITIONER

We oft n hear of the professorial physician in the full time research phy ci n who h s et red to his ivory tower n t understanding the pr blems of the pare t or of the pr ctitioner B t what about the private practiti ner who retires to hi private office a d says. I h n t t me to consider your wo ti s about your business or family You he a gastre ule so just stop worrying. It would be just as log cal for h m to y to a other patient Yes y have pneumonia but I ha en t t m t give y u penicillin Unless doctor tak s into acc unt ery spict of a ma is life he is giving inadequate treat πent

> -B KENT TENNEY M D ns Md 11 nal p 586 Nov 1953

PREVENTION OF HEADACHE FOLLOWING SPINAL ANESTHESIA

PAUL KUSHNER Captain, MC, USAR

NE of the most distressing sequelae of spinal anesthesis, both for the patient and the anesthesiologist, is the post-spinal tap headache. It often complicates an otherwise uneventful postoperative course, and minimizes the salutary effects of the anesthesia Notoriously resistant to treatment, it retards full ambulation, thus prolonging hospitalization.

The headache may be so severe that it leaves the patient with a lasting and distasteful impression of spinal anesthesia. He soon forgets the role that the anesthesic played in his treatment, but he recalls the "miserable" headache that was its aftermath in interviewing patients preoperatively one often encounters a reluctance to accept spinal anesthesia because they remember the oft-told and retold experience of an acquain tance who had a postspinal anesthesia headache Many patients want to be assured that "this will not happen to me" Such assurances are best not given Yet the physician's failure to do so is often misinterpreted by the patient, and leaves him with the erroneous impression that the incidence must therefore be disproportionately high.

No generally effective medical treatment for the postspinal headache has been found, the results obtained with commonly used analgesics are disappointing Nor has any method been evolved for preoperatively determining headache-prone personal, although it has been suggested that such a personality type exists 1-9

Most anesthesiologists are now agreed that the causative factor is the continued loss of spinal fluid through the lumber puncture site, with the subsequent reduction of spinal fluid pressure. The resultant loss of buoyancy of the brain causes tension on the tentorium cerebelli and falx cerebri. The traction on these structures gives the characteristic spinal headache which persuits as long as the patient maintains an erect posture Retief usually follows promptly on assuming a suprise position.

From th 121st Evacuat o Hosp tal Korea Capt Ku hne is now a g d th U S Atmy Hospital Ft Bel it Va

thus relieving the tension on the supporting structures. Headaches that do not have these characteristics are probably not spinal in origin although any headache which occurs in a pa tient following spinal anesthesia is usually attributed to that 0.011.80

It has been estimated by Franksson and Gordh' that spinal fluid is lost at the rate of 10 cc per hour by seepage into the extradural space after lumbar puncture Prophylactic measures must therefore be directed at restoring the cerebrospinal fluid equilibrium. This can be partially accomplished by puncturing the dura with small bore needles and minimizing the loss of fluid through this site. It has been shown that there is a progressive decline in the incidence of spinal tap headacle as the bore of the needle is reduced from "0 to 2" to "6 gige and that headache following spinal anesthesia can be decreased by using small gage spinal needles -

VIFTHOD AND TECHNIC

The present study was undertaken with a 26-gage 2.5 inch spinal needle All of the patients were soldiers between the ages of 19 and 47 with the average age of 21 4 years. To minimize the postoperative loss of spinal fluid through the puncture site all patients were routinely asked to lie flat in bed for a period of six hours postoperatively They were also encouraged to drink liquids freely to restore adequate hydration. The patients for this study were unselected. The present series represents con secutive admissions to the surgical service where spinal anes thesia was the method of choice Three patients in this group had had spinal anesthesia previously followed by headache Procaine hydrochloride and tetracaine hydrochloride (pontocaine hydrochloride) were used exclusively

In completing the study certain technical difficulties were encountered in performing the tap with the of-gage needle. The needle being very flexible because of its fineness had to be used with a 'I gage introducer needle to minimize the danger of breakin, the needle in situ. The hub of the introducer needle provented the Grage spinal needle from being pushed flush with the slin and consequently there was a loss of usable length of about 1 cm via the hub of the introducer Thus shortened to , o cm the of Lage needle was too short to reach the dura in very obese patients. In these patients the lumbar puncture was easily performed with the standard 20 gage needle and the dura was demonstrated to lie deeper than 5 o cm In this present group of 103 patients only three fell into this category Spinal fluid flows very slowly through the fine bore of the of-gage needle and it requires more patience on the part of the operator to wait for the fluid to appear. It e use of the 26-gage needle is also attended with a greater danger of breakage. In the hands of those experienced in doing lumbar punctures, and with the use of the introducer, this danger is greatly minimized.

DESIII TO

Prior to the introduction of the 26-gage needle lumbar punc tures were routinely performed with the standard 22 gage spinal needle. The incidence of postspinal tap headache in a similar group in which the 22 gage needle was used was five percent. In the group in which the tap was performed with the 26 gage needle, there was not a single postspinal tap headache. The surgical procedures performed represented a fair sampling of the operations encountered in most military hospitals and included 15 appendectomies 21 inguinal hermiorthaphies, one umbilical hermiorthaphy, three exploratory laparotomies, 34 rectal procedures 16 lower extremity procedures, and 10 circumcisions making a total of 100 operations

The group studied represented a fairly restricted age group, the majority being under 30, however, it is in the younger age group that postspinal tap headache is most commonly encoun tered. Although these patients had the benefit of the type of psychologic "screening" that combat troops receive, they also were operated on in the field, away from the secure influences of home and family

The results in this group were very gratifying, and justified the extra effort expended in employing a 26 gage needle. The procedure merits consideration for routine use in spinal anes thesia provided adequate precautions are taken by the operator to prevent breaking the needle in situ.

SUMMARY

Because the incidence of postspinal tap headache has been observed to decrease progressively as the bore of the needle used in introducing anesthetics is reduced, a 26 gage, 25 inch spinal needle was used in 100 unselected patients. None of these patients developed headache after spinal anesthesia. It is believed this procedure ments consideration for the routine use of spinal anesthesia.

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WHAT THE FUTURE HOLDS

The lowest death rate in the history of the co try and the largest annual number of births were forec st f r 1954 Dr Leon rd A Sche le Surgeon General of the Public Health Ser ice in de hi statement on the bas of v t l st tist cs reports for the first 10 months of the year

The death rate for 1954 is expected to close at 9.2 death per 1 000 population a substantial drop from the r tes of 96 or 97 which have prevail dover the p st five years

Birth will top the four million mark for the first time according to preliminary est mates. The expected both tate of 25.2 per 1000 population is the second high st in 28 years and only 53 percent below the peak year of 1947

The marriage rate sank to 9.2 per 1 000 population in the first 10 m nths of 1954 compared with 9.7 for the same period the year before Low birth r tes duri g the 1930 s re ulting in relati e scarcity of y ng reople of marriageable age in the present decade were held ch fly responsibl for the matriag decline

Di orces in the first 9 months of 1954 were down 4 percent from the comparable 1953 per od on the basi of reports from 25 areas S no the 1946 peak di orce rates have dropped over 40 percent

THE ARMED FORCES INSTITUTE OF PATHOLOGY

RALPH M THOMPSON Colonel USAF (MC)

N 21 May 1862 nearly 93 years ago, the Armed Forces Institute of Pathology was founded and now after those many progressive and fruitful years it finds itself occupying one of the most modern and unique edifices in the world, located on the grounds of the Walter Reed Army Medical Center in Washington, D C

This new building comprises more than 200,000 square feet and is eight stories high, three of the stories being below ground level The main wall structure is without windows and is of blast resistant, reinforced concrete

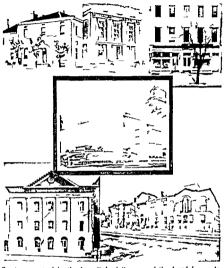
The Armed Forces Institute of Pathology (AFIP) was founded by the young vigorous, and venturesome Surgeon General William A Hammond and was known as the Army Medical Museum His great vision and foresight led to the creation of an institute of pathology second to none This current position and standing of the AFIP is the culmination of the dreams and wisdom of many notable and distinguished minds of world medicine, past and present.

Three months to the day following the creation and issuance of the historical Surgeon General's Circular 2, War Department, dated 21 May 1862 the Armed Forces Institute of Pathology, which we know today, became a physical reality under the direction of Major John H Brinton The Museum then consisted of three direct and armished specimens resting on a small shell above the inkstrind on the desk of the newly appoint od curator, Major Brinton There were a few preparations of human anatomy such as several human craniums, a skeleton, two primitive wax injections demonstrating the vascular system, and some plastic casts and drawings which were also in the office of the Surgeon General

From this modest beginning, the Armed Forces Institute of Pathology today houses almost 700,000 accessions, comprised of surgical biopsy specimens complete autopsy data and speci

Fom Arm d Forc I ster ef Pathology W sh gton D C. Colo 1 Thomps n 1 dp ty dr t

mens and allied pathology material all of which is filed for teaching research and posterity. During the preceding 93 years the growth of the AFIP has been phenomenal today as occupancy of the new building commences the AFIP is already faced



with problems incident to inadequate space and necessary steps have been initiated for possible creation of a new wing and other additions With continued progress, foresight and future promise, the Army Medical Museum was redesignated in 1946 as the Army Institute of Pathology, a name more suited and befitting the missions and functions incident to professional and scientific advancement

Recognizing the Army Institute of Pathology as a national organization, on 6 July 1949, following the unification of the armed services, the present designation was adopted, namely, the Armed Forces Institute of Pathology of the Department of Defense

The Armed Forces Institute of Pathology is further defined and established by the current Department of Defense Directive 5136 5 dated 6 August 1953, pursuant to authority vested in the Secretary of Defense by the National Security Act of 1947 as amended The responsibilities, functions and relationships are clearly designated and set forth as a joint agency of the three military departments under the authority, direction, and control of the Secretary of Defense with the Secretary of the Army as the management agent. Under existing regulations the policy direction regarding medical and allied activities of the Armed Forces Institute of Pathology is vested in the Board of Gover nors which consists of the Surgeons General of the Army the Navy and the Air Force or their respectively designated alter nates who in the absence of the principals, are authorized to act or speak for them

Located on the grounds of the Walter Reed Army Medical Certer incident to Congressional action, (Bill H R 6478) arend ing Public Law 626, Eightieth Congress, in 1950 the current position of the Armed Forces Institute of Pathology is perhaps best defined by Major General Leonard D Heaton MC, USA, the Commanding General of the Center Before his key staff members, on 13 August 1954, a meeting also attended by representatives of The Surgeon General of the Army, Commanding General, Military District of Washington, and the Directorate of the Armed Forces Institute of Pathology, he stated the following, which is based upon existing directives

It should be made plain at the outset that the Armed Forces Institute of Pathology is basically a tripartite organization—Army havy and Air Force It is a separate distinct class 2 organization under admin istrative jurisdiction of The Surgeon General of the Army and under the command of The Director Although the Armed Forces Institute of Pathology will be physically located on the Post at Walter Reed the only command responsibility that will be exercised by the Center will be of necessity in those areas of administration and logistical support the responsibility for which has been laid down in SGO Administrative

Letter 16 Insofar as those are s are concerned. The D rector of the Armed Forces Institute of Pathology will co-ordinate his activities with the Center command.

ORGANIZATION

The director of the Armed Forces Institute of Pathology is assisted by two deput, directors representing the other two military departments. He is further assisted by a professional technical and clerical staff consisting of medical service or medical department officers and other military personnel of the Army the Navy and the Air Force and also such civilian personnel which includes consultants and experts which he with the approval of the Secretary of the Army as management agent, determines is necessary

With the continued concurrence of the board of governors and the approval of the Secretary of the Army The Director is also aided by a Scientific Advisory Board of Consultants appointed by the Secretary for a term not to exceed five years. These members are eminont specialists of the medical dental and voten nary profession

The Armed Forces Institute of Patholo, by its charter serves as a central laboratory of pathology for the Department of Defense and such other Federal agencies agreed upon by the Secretary of Defense and the head of the agency concerned It is designated as a self contained and independent institution. The Veterans Administration and the United States Public Health Service have been included in this service and more recently the Atomic En ergy Commission and the Atomic Bomb Casualty Commission The Armed Forces Institute of Pathology also functions in cooperation with the National Research Council in connection with the operation of the 90 registries of special pathology under the American Registry of Pathology which is one of its major components (see below) Also the AFIP along with the National Research Council s Subcommittee of Oncology under the Com mittee on Pathology is charged with the responsibility of the completion of the Atlas of Tumor Pathology a work which is internationally known. The latter mentioned Federal agen cies which comprise the total complement furnish certain professional subprofessional and clerical personnel thus round ing out for the most part the existing family To arrive at the total personnel figure certain fellows sponsored by national medical organizations and a varying number of volunteer work ers must be included Some of the latter are from foreign coun tries

FUNCTIONS

The principal responsibilities and functions of the Armod Forces Institute of Pathology under established and fixed policy are as follows

- 1 Maintain a consultation service for the diagnosis of pathologic tissue for the Department of Defense other federal agencies and for civilian pathologists and serve as the chief reviewing authority on the diagnosis of pathologic tissue for the Army Navy and Air Force
- 2 Conduct experimental statistical and morphological researches in the broad field of pathology including correlation with such other medical specialties as will enable the Institute to effectively pursue its research projects
- 3 Provide instruction in advanced pathology and related subjects to medical dental and veterinary officers of the Armed Forces and, based on availability of facilities to such other qualified professional persons who are authorized to study or receive graduate instruction at the Institute.
- 4 Train qualified and approved enlisted personnel of the Armed Forces in pathologic technics and in relevant medical photographic medical arts and museum activities
- 5 Prepare or otherwise procure and duplicate teaching aids such as sets of microscopic slides photographic material medical visual aids or other texts illustrating the pathology of the various special medical fields used in the training of Armed Forces personnel
- 6 Donate or loan duplicate pathologic photographic and other educational material to other Federal medical services museums medical schools scientific institutions and to qualified persons connected with medical dental or veterinary professions when determined appropriate and practicable
- 7 Operate the American Registry of Pathology as a co operative enterprise in medical research and education between the institute and civilian medical profession under such conditions as may be agreed upon between the board of governors and the National Research Council
- 8 Maintain a medical illustration service for the collection preparation duplication publication exhibition reference and file of medical illustrative material of medical inlitary importance except original motion picture footage primarily for the support of programs of the institute but which may be made available to the medical services of the Armed Forces other Federal agencies and qualified per sons when determined appropriate and practicable

9 Maintain medical museums for the instruction of qualified and authorized persons and display openly selected museum exhibits to the lypuble

10 Perform such other related function s may be assigned from

From its beginning in 1869 until 1990 the major mission of the museum was collection and display This emphasis was very important and necessary and this concept laid the foundation for the structure that exists today

In 1900 Major (now Brigadier General USA (Ret.)) George Russell Callender an eminent and distinguished physician and pathologist and an outstanding medical administrator with great wisdom and foresight lifted the Armed Forces Institute of Path ology from a depot for the collection of morbid anatomical spec irons to an institution actively participating in the study of living pathology pathologic research and pathologic education He launched the greatest and most dynamic pathologic center in the world By his untiring effort and great medical vision various directives were modernized and changed so that complete autopsy data and material and surgical biopsy material were required to be sent in for study statistical research and per manent files in 1920 the then Major Callender initiated the first steps with the co-operation of a group representing the American Academy of Ophthalmology toward the organization of a registry of ophthalmic pathology where pathology relative to the eye could be collected and cases followed for study and research Thus was born the first of the 22 registries of path ology and subsequently The American Registry of Pathology under the auspices of the National Research Council

The concepts promulgated by Curator Callender in 1920 have been ably carried on by the successive curators and directors together with the help and co-operation of their competent and efficient staffs The late Major Paul Edgar McNabb MC USA and Colonel Virgil H Cornell MC USA (Ret) during the years 1930 to 1935 did much to promote the new look of the Armed Forces Institute of Pathology Colonel James Earle Ash MC USA (Ret.) was appointed curator in 1937 and later became the director of the newly designated Army Institute of Pathology in 1946 Colonel 1sh was responsible for increasing the number of the various registries of pathology and enhanced greatly the professional stature and prestige of the AFIP As commanding officer during the World War II years he organized a competent and well rounded staff and efficiently met the numerous problems incident to the great expansion

Following the retirement of Colonel 1sh in 1946 Brigadier General Raymond O Dart MC USA was appointed the director

Through the untiring efforts of General Dart, this organization became an Armed Forces Institute of Pathology and the new building became a physical reality



Curato s and di ectors f om 1920 to 1955 Top row left to r ght Brigader Gene al Geo ge Rus ell Callender MC USA (Ret) 1920-1922 and 1924 1929 Colonel James Ea le Ash MC USA (Ret) 1929 1931 and 1937 1946 Mayo Paul Edgar McNabb MC USA 1931 1933 Bottom row left to right Majo Vrigit IL Cornell MC USA 1933 1935 Bigadie General Raymond O Dat MC USA (Ret) 1935 1936 and 1946-1950 Bigad er Gene al Elbert DeCoursey MC USA 1950

General Dart was succeeded as director in 1950 by Brigadier General Elbert DeCoursey, MC, USA, who is the present director It is only fitting that General DeCoursey enjoys the honor of being the first director in this new edifice as he is responsible for the building we have today, which houses one of the most unique agencies of the Department of Defense He has created the present team of the Armed Forces Institute of Pathology, dedicated to the service of humanity and devoted to the causes and effects of disease

MAJOR DEPARTMENTS

The Armed Forces Institute of Pathology comprises four major components the department of pathology, the medical illus-

tration service the American registry of pathology and the medical museum previously referred to

TABLE 1 Am Rg try of P th 1 gy

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Rgt	Sp r	Dat blhd
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D indiphigy	Am DelA	1933
D malp th 1 by	Am Acad my ID mail gy d Syphil gy	1937
Edn phlgy	N .	1918
G to-rypth 1 gy	Am ca Urolg IA t	1947
C rol gy	G tlg 1So ty	1915
Hp pahlgy	Ame Grotlg Aust	1949
K dym	A Urolg 1A	1938
L pro y	L nad k od M m 1	1950
Lymph t tum	Am A fPthl	19 5
nop hlgy	Am A oc finno pahlgy Am lyh	1942
	Λ	1942
nalp th 1 gy	Am es I fN t t	1951
M lo-skili phigy	Am ca So y fCl cal Phlgy	1943
Ophhlm phlgy	Am AdmyfOphthl molgydOlyglgy	192
Olrygphlgy	Am AdmyfOphthl mlgyndOltyglgy	1935
f m	Am c U i cal A oc	1913
Rdigphley	Am Clig IRdig Am R g RyS ty Rdib S ty f N h	1947 1947
	Am S G IN II	1947
Tumes ffm! po- dtym	Am S ty ICl 1 Phigy	1952
Tm fga o- it tnal ra	Ame So ty of Cl 1 Phlgy	195
V mnary p th 1 -y	Am V t nary M d cal	1944

REGISTRY OF PATHOLOGY

During the calendar year 1953, 77,612 accessions were received, 21,537 of which were autopsy and 56,075, surgical biopsy specimens. The latter included 579 from the Atomic Bomb Casualty Commission in Japan. During the first six months of 1954 there was a seven and one half percent increase in accessions over the same period in 1953.

The source of accessions reflects the spread of the workload from contributors. Fifty two percent of the accessions were received from the armed services, while 27 percent were from the Veterans Administration, 13 percent from civilian sources through the various registries, and eight percent were from other Federal agencies, such as the United States Public Health Service, Atom ic Energy Commission, Atomic Bomb Casualty Commission, Federal Bureau of Investigation, et cetera

The registries of pathology now total 22 (table 1) and operate as previously mentioned under the auspices of the National Research Council Each registry is sponsored by a national medical society and includes the fields of dental and veterinary medicine

MEDICAL MUSEUM

The present medical museum, which was the parent and nu cleus of the now existing Armed Forces Institute of Pathology, has two principal functions one to exhibit and illustrate disease and medical problems to the lay public, and the other to collect and propare gross pathologic material for teaching the medical professions

Medical items and data of professional historical nature are collected and catalogued by the Museum staff and from time to time parts of these collections are exhibited as well as sent out on loan for exhibit purposes

It is interesting to note that over 150 000 people visited the museum in the calendar year 1953, and this should be exceeded in 1954 Because of this educational value to the lay public, by Congressional edict, this activity remains in its present location on the Vall adjacent to the Smithsonian Institute where it can best function and perform its services. In the new building space is provided for the professional teaching material and laboratories for the investigation of methods for preserving and mounting specimens.

DEPARTMENT OF PATHOLOGY

With increased space, modern laboratories and other facilities, the department of pathology is completely activated including, in addition to the pathology division, the basic laboratory and the dynamic pathology divisions All these activities round out an excellent and complete path ology program and permit evpansion from a limited morphologic and statistical approach. The sciences related to pathology are now represented and complete the pathology team Each of the ancillary disciplines are staffed by competent scientists and assistants.

With the completion of the aforementioned department of path ology the experimental statistical and morphologic research on diseases and injuries of medicomilitary importance will be accelerated and professional education and training will be more complete and definitely expanded to maximum efficiency

MEDICAL II LUSTRATION SERVICE

The medical illustration service is maintained for the collection preparation duplication publication exhibition reference and file of medical illustrative material of both medicomilitary and general professional importance. Though primarily for the purpose of supporting the educational and research programs of the Armed Forces Institute of Pathology, the facilities of the medical illustration service are made available to the medical services of the Vmy Navy and Air Force and to such other Federal and civilian agencies or individuals as may be approved by the director. The functions of the medical illustration service.

- I Maint in a perma ent central file of photographic neg tives color transparence s photomicrographs roentgenograms drawings and similar materi ls illustrating diseases wounds and injuries of mitrary import nee and selected profess onal acti ities of the medical dispartments of the armed forces. This file is a permanent illustrative record if important medical activities and progress and may be used for illustrating scientific articles and reports the preparation of scien trie exhibit a audio-vi unlaids in dithe publication of attaces and other pathology texts required for the training program of the armed services.
- 2 Maintain adequate f cilit es for clinic I photography photom crography and medical art for the Armed Forces Institute of Pathology and supervise milar ctitites in designated medical installations of the Army N vy nd Air Forc as indicated herein or as may be dected by the surge in seperal of the separate services
- 3 Maint in and operate a trining aids library contining duplic te prints of notion price flootage on clinical subjects in clease print of official films and film strips and a sample collection or photographic record of other Army N vv and Air Force official medic I training aids for the Armed Forces in Little of Pathology.

- 4 Provide facilities for training in medical illustration and medical photographic technics for personnel of the armed forces and such other individuals as may be approved by the director
- 5 Maintain technical reproduction facilities for printing and publishing the Armed Forces Institute of Pathology texts and illustrations
- 6 Secure prepare or arrange all details in connection with the production of audio-visual training aids for the Armed Forces Institute of Pathology
- 7 Atrange and accomplish all details relative to Atmed Forces In stitute of Pathology displays presented in the Institute and at state national and military meetings and conventions
 - 8 Conduct researches in all phases of medical illustration

In this new Armed Forces Institute of Pathology structure the routine activities herotofore performed, together with the activation of ancillary scientific disciplines, will permit expansion and will lead to greater activities in the field of experimental pathology, pathologic research, and medical education Regarding the latter much will be accomplished through the medium of the incorporated closed circuit color television system, designed for expansion with the availability of new and improved equipment. The television studio with its two story ceiling height is most modern and impressive as are all of the other laboratories

Dr Melvin A Casberg, former Assistant Secretary of Defense (Health and Medical) in his address delivered at the cornerstone laying ceremony on 20 October 1953, stated "As we gather in the shadow of this modern edifice some may measure its greatness in terms of concrete tonnage or the dollar cost per square foot but I choose to measure it in terms which do not lend them solves readily to the computations of an adding machine—namely by the countless number of human lives saved and by the suffering and misery alleviated, As I spread the mortar which will unite the cornerstone with this building, it shall be my praver that all our medical resources, civilian as well as military, similarly shall be cemented in a united fight against disease and for the preservation of our country"

REFERENCE

¹ Ca be g M A A tr b t t the Atm d Fo c s Institute f P th 1 gy U S Armed Forces M I 4 1667 1674 D 1953

MILITARY MANPOWER CONSERVATION AND PEPTIC ULCER

BRUNO JASTREMSKI C!! MC USA ELMER W HEFFERNON C pt MC AUS

PEPTIC ulcer is frequently diagnosed in army personnel and is a considerable economic problem in loss of manpower Over the years the medical officers have been keenly aware of this as evidenced by articles published periodically relating the problem of peptic ulcer to morbidity military effective ness social problems cost et cetera. Having reviewed these studies we are reporting our statistics which are based on eight months observation of 111 enlisted men and 2º officers with peptic ulcers who have been under our care Our objective is to recommend a plan of treatment and disposition of these patients and possibly to stimulate a more extensive study aimed toward deriving maximum benefits from both aspects of such a plan

PLAN FOR PEPTIC ULCER MANAGEMENT

Our course of action at this hospital has been modified to the present plan If the patient is an officer we try to retain him in the service with few exceptions regardless of whether or not his ulcer was incurred in the line of duty. We believe however that enlisted men who have had a peptic ulcer prior to coming on active duty should be separated under the provisions of SR 600 450 10 because of the possibilities of poor motivation and of aggravation of the ulcer by continued service. Occasionally such soldiers who were near the end of their regular enlistrents have responded to treatment and were retained in active duty status until separated through regular channels. The major problem however is to decide who of the enlisted men with ulcers in curred in the line of duty should be given medical retirement with severance pay or pension and who should be kept in active ervice.

Most of our patients were hospitalized after the diagnosis was established on the basis of a complete workup including gastro intestinal series on an outpatient status. Those who had night pain radiation of prin to the back obvious complications or failed to respond to treatment as outpatients were hospitalized. Ulcer craters were demonstrable in these naturels much more fre

quently than reported in a civilian gastroenterologic practice All patients were followed by gastric analyses after Ewald meals, and careful examination of their stools for occult blood

Patients were hospitalized for about three weeks, depending on severity of symptoms, response to treatment, and the pres ence of complications They were placed on a strict Sippy diet which was rapidly progressed They also received aluminum hy droxide gel (ampholel) hourly throughout the day and from two to three hour intervals during the night Phenobarbital was given four times daily, before meals and at bedtime Methantheline bromide (banthine bromide) was routinely used, in 100 mg doses every six hours or in 50 mg doses before meals and one dose of 100 mg at bedtime Bed rest with bathroom privileges was maintained until symptoms had abated when ambulation was per mitted Smoking was prohibited and the patient was urged to ab stain permanently Small, simply written booklets about peptic ulcer were given to patients for their education. They were then briefed, either individually or in a group, about the ulcer problem in general and were encouraged to ask questions and ioin in the discussions Roentgenograms and diagrams were shown to the patient when necessary for his further education Other sup portive therapy was given when indicated and any ulcer com plications such as hemorrhage or obstruction were treated specifically as they arose

After a patient had been asymptomatic for a week or more he was returned to duty or separated depending on factors to be discussed Those going back to duty received a P 3 on their physical profile with recommendations for omission of field duty. heavy labor, and other duties that might interfere with their future care bach profile is effective for six months at the end of which time each patient must be re-evaluated by a medical officer The patient was given a convalescent ulcer type of diet to follow for an indefinite period. He was instructed to take milk between meals, carrying it in a thermos bottle if necessary He was given 0 016 gram of phenobarbital to take before meals and at bedtime, and 2 drams of aluminum hydroxide gel an hour after meals and at bedtime or at any other time for epigastric dis tress Methantheline bromide was given depending on its need Smoking was prohibited Laxatives were also prohibited and for any resulting constipation a mixture of equal parts of orange luice and water one to three times daily was advised General advice was given regarding emotional tension proper rest, diet. and avoidance of alcohol The patient was then seen as an outnatient once a month or more often if necessary Social aid was given when needed This program was based on our firm belief that a peptic ulcer especially duodenal constitutes a chronic problem similar to diabetes rellitus, and thus demands pro-328368 O 55 6

longed intelligent management and prophylaxis to keep the patient well

MANAGEMENT OF GASTRIC ULCERS

The management of patients with gastric ulcers was similar with certain modifications All were hospitalized and those whose lesions were obviously malignant were operated on The rest were treated as discussed earlier however upper gastromesainal series were repeated at least once a week. If the ulcer failed to heal completely in five weeks the patient was done After healing was complete upper gastromestinal series were repeated act month for three months and then every three months for one year. These patients were also cautioned to report for examination every six months thereafter for two years that it is not a subject to the patients with gastric ulcers were operated on and both were found to have beingn lesions.

Table 1 gives a breakdown of pertinent factors in our 136 patients with peptic ulcers. These patients were from 18 to 53 years of age their length of service ranged from two weeks to 35 years and their symptoms were present for from three weeks to 21 years. As expected patients with longer service reacted more favorably to treatment. Three patients had gastric ulcers Of 18 patients who hemorrhaged from their ulcers only one required surgical intervention. Eight patients had recurrence of their ulcer symptoms following a simple surgical closure of perforated ulcers. Those who were married and were eating and living at home did better than those who ate in mess halls and lived in barracks. No correlation has been noted between gastic accitity and ultimate disposition.

RESULTS OF MANAGEMENT

On evaluation of the results of our management we find that 113 patients were sufficiently improved to return to duty Of this group 21 were officers and 92 were enlisted men representing a salvage rate of 95 percent and 81 percent respectively One officer and 14 enlisted men were separated from the service without compensation because their ulcers were present prior to entering active duty Eight enlisted men were given medical discharges with compensation because their ulcers were incurred in the service We are aware that this is an eight-months follow up only however many of these patients had formerly been hos pitalized elsewhere or before undergoing this it erapeutic regimen were incapacitated for periods up to six or eight months at a time

TABLE 2 Stat stical dist-bution of pertinent factors in 136 patients with peptic ulce s

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We believe that the majority of the patients with ulcers in the army can perform satisfactory service provided that the recommendations on their physical profiles be followed. It is also important that the medical officer keep track of these patients by periodic checkups in order to maintain prolonged therapeutic control in this manner a patient can be intelligently briefed and reassured and adequately treated

SUMMARY

We have presented a statistical survey with an eight-months follow up of 136 patients with proved duodenal ulcers. It is our belief that the salvage rate has been high enough to warrant further study and investigation in other military hospitals to determine whether a prolonged dietary and medical program will be worthwhile in conserving military manpower. It may be that further study will disclose that special mess hall facilities for such patients in the field would be of further value

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HEART DISEASE AND PREGNANCY

The e is littl p blem the teatm t of the p tent who is pre at dwh suffe from heat dise. The phy con hould teat the hert dise se thogh the ptietwre tpeg t nd h hould treat the preg ncy s th ugh the pate t dia ot ha h t d In either condition the ndc to for te tment shold bd ct donly to e ther the pegn ncy o ti h rt d ease Ther is n h t d s e se which r qur bst t c l terf r nce There i e e n nd ca t on to inter pt a p eg cy or ster lize the patie t bec u e f heart d sease

- JOHN F BRIGGS M D D jib Cb i р 152 F b 1954

THE PRACTICALITY OF FIELD RESEARCH

JOHN M HOWARD Captain, MC USAR RICHARD P MASON Colonel MC USA

THE army in the field has an opportunity for research that cannot be duplicated by any other organization Just as the staff of a tuberculosis hospital studies tuberculosis, or that of a cancer hospital studies cancer, so must physicians in the Army Medical Service study trauma There is no greater opportunity or responsibility in the field of trauma comparable to that of the Army Medical Service To fail to recognize and to develop this opportunity is, first, to neglect the wounded soldier and, second, to retard the development of the Army Medical Service

Field surgery is not civilian surgery under canvas, it is a specialty in itself Unless its problems are studied and documented, the lessons of previous wars must be relearned in each war Meanwhile, lives and limbs are needlessly lost Field research offers the means of studying and documenting surgical experiences so that they need not be relearned each time at the expense of our combat casualties

Field research offers the opportunity for finding better means of caring for the combat soldier. That such an attempt should be made is obvious. The question, therefore, is should the attempt be an organized project by a specialized full time team? This question must be evaluated in terms of its contributions, real and potential, versus its cost in manpower and money. A review of the record of the work during 20 months of the Acrean conflict demonstrates a conclusive, affirmative answer A single specific example proves the value of an organized project and far more than justifies the outlay of manpower and money.

Shortly after the arrival in Korea in December 1951, of the sur gical research team from the Army Medical Service Graduate School in Washington, D C, it became apparent that one of the major problems confronting the surgeons was the management of cas unlites with arternal wounds Standard practice in previous wars had been to light the vessels because anastomosis had not proved feasible Meanwhile, progress had been made in the general field of vascular surgery in the United States which

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warranted a re evaluation of this practice. The problem was discussed with the surgical consultant of the Eighth Army who stated that repair of arterial wounds in the Korean conflict had been repeatedly attempted by various surgeons and had not proved feasible In his experience the only casualty who had not lost his leg as a consequence of injury to the popliteal artery was an occasional patient in whom the injury was not recognized and the wound not explored

Repair of arterial wounds was therefore undertaken as a project by the surgical research team. The results demonstrated its feasibility The amputation rate following popliteal anas tomosis decreased from 72 percent (World War II) to about 20 percent Surgeons from each hospital were instructed in the technic and provided with better instruments. As a result, the amputation rate fell throughout the theater. These trained surgeons however were soon rotated from horea and the amoutation rate rose The operating surgeons from each hospital who ar rived as replacements were then given instruction by members of the surgical research team

As a result of this single research project hundreds of limbs have been saved The cost to the American taxpaver of supporting a veteran with an amoutated extremity has been estimated at about \$100 000 A hundred such casualties would cost \$10 000 000 The investment in the entire research team in mannower and in dollars is thus but an insignificant fraction of the immediate dividends from this single project

Other studies have delineated the problems of management of the casualty with posttraumatic anuria and definite progress has been made in lowering the mortality from this complication in the combat theater For the first time the entire blood program has been thoroughly surveyed at the point of use in the combat theater and the effects of transfusion on the cloting mechanism reviewed. The introduction of the plasma expanders into the combat theater has been supervised and their effectiveness in the seriously injured battle casualty established This resulted in a potential decrease in the high incidence of homologous serum hepatitis. The characteristics of wounds and the sequence of bacteriologic and histologic changes have been described The problems of resuscitation and massive transfusions have been analyzed and recommendations made for better treatment

These practical and valuable projects have demonstrated the function and proved the worth of field research Therefore the responsibility for acknowledging and developing the potentiali ties of field investigation no longer rests with the field research unit but with the leaders of the Army Medical Service

THE MISSION OF FIELD RESEARCH

The primary mission of research in the field is to find better means of providing medical support to combat troops From the practical standpoint, this consists of defining the problems and then solving them The identification of the problems may require clinical, laboratory, and statistical studies Questions such as Does the stress of combat sometimes lead to adrenal insuf ficiency?" require considerable basic work, and the result may be merely to demonstrate that no problem in adrenal cortical function is detectable There is no short cut to the identification of such problems Similarly, if patients after massive trans fusions demonstrate a mild bleeding tendency, the basic problem has not been identified until the clotting mechanism has been studied and the specific defect pinpointed. Thus basic research may be necessary in identifying and solving some of the prob lems Basic research as a primary objective should seldom be undertaken in the field because of the inherent difficulties and cost involved Such work can be better performed in the zone of the interior The greatest contributions from combat surgical research will come from those studies directed toward therapy

The second aspect of the mission is to report the findings immediately back to the combat theater and thereby permit the medical officers to keep abreast of developments. The third aspect of the mission is to report to the Research and Development Board those problems which require additional work in the clinics and laboratories in the zone of the interior. Thus the problems of field research will start in the front lines and extend through the entire chain of evacuation. The influence which such work will have on civilian thinking and practice is an additional benefit but of secondary importance in the planning of the work.

METHODS OF OPERATION

The research program should be reviewed by the Coordinating Committee on Wedical Sciences, Office of the Assistant Secretary of Defense (Research and Development) to ensure that the three military departments are informed of the research that is to be conducted, to ascertain whether triservice participation is indicated to avoid unnecessary duplication, to enlist fiscal support, and to make available to the other services progress reports and ultimate results

The areas of research conducted should be those directed by broad policy of the Department of Defense. The administration and technical support should follow directives of the sponsoring service responsible for the research team, and should be coordinated through the theater commander. The chief of the Medical Research and Development Division Office of the Surgeon General Department of the Army or of similar divisions of the Navy and Air Force should provide over all direction of effort and co-ordination select personnel and gain the co-operation of military and civilian establishments in the United States for development of teams and methods This office should also assist in liaison between the work in the field and the work in military and civilian institutions in the zone of the interior The direction must be very broad, for the zone of the interior The direction must be very broad, for the specific direction and administration of the teams must remain in the field The Army Medical Service Graduate School provided such an institution in which methods could be developed and personnel trained

The surgical research unit in the field should be attached to a medical general laboratory for technical and logistic support Because the mission of the theater laboratory is to support the field work it should participate as opportunity provides in the technical projects of the research teams A successful example of such an administrative arrangement is the attachment of the Far East medical research unit to the 406th Medical General Laboratory in Tokyo The surgical research team was one part of the Far East medical research unit. The director of the theater medical research unit and the desired race advising and assisting the members professionally and administratively. He should keep the army surgeon in orned of work planned work in progress and work completed

This liaison also provides an opportunity for the research units to use the perspective of the consultant staff of the field army and theater surgeons in planning research projects originating at the combat level. All reports from the field research units should be made to the director of the theater medical research unit and through him to the theater and field army surgeon and to the director of surgical research in the zone of the inherior

The surgical research program as designed in horea included an officer in the combat infantry division to study resuscitation and evacuation a unit at a forward hospital to study the combat casualty during further resuscitation and primary surgery and a unit at an evacuation hospital to study those patients who developed postoperative complications in addition certain essualties could be selectively evacuated to Tokyo Army Hospital and to Walter Reed Army Hospital for follow up evaluation. This system requires limited extension. Added emphasis must be placed on the work in the infantry division because it is at this level that most lives are lost Furthermore there should be a research unt in the communication zone working in co-operation.

with the units in the combat area. This unit could be attrached to a general hospital, but should be assigned to the medical research unit of the theater medical general laboratory. Thus over all direction and technical support is retained by the director of the theater medical research unit. In the Far East such a unit could be located at Tokyo Army Hospital and based on the Far East medical research unit and the 40th Medical General Laboratory for direction and support. This plan would permit a patient to be observed from the time he was wounded to the time he left the theater. The unit in the communication zone would provide a means of obtaining systematic follow up in all clinical studies. Casualties could then be selectively evacuated to designated institutions in the zone of the interior for continued observation.

To ensure orientation of the program along the lines of finding and solving the practical problems, while protecting at all times the welfare of each casualty, the surgical research units should be under the immediate direction of a well trained surgeon. He should direct the surgical research program at the field level and be directly responsible to the director of the theater medical research unit. If research is simultaneously in progress in other fields of medicine (epidemiology, psychiatry, et cetera) every effect must be made to overcome the limitations of travel and communication so as to maintain liaison with the work in progress by those groups. The field director in the zone of the interior should spend several months a year in the field. Consultants from civilian or other military installations, most effective short-ly after the beginning of a project, should be available when special problems are encountered as they are in a position to assist in the development of the project as related to technical approaches and emphasis.

Communication and travel are two of the most difficult obstacles in a combat theater The routine monthly visits of the director, theater research unit, to each field unit would do much to overcome the handicaps of communication Means of trans portation should be assigned to the theater research unit for distribution to the various specialized groups Travel orders should be issued which permit frequent travel between the units in the combat zone and between the combat and communication zone

ORGANIZATION OF A SURGICAL RESEARCH UNIT

The surgical research unit should be prepared to study primarily the battle casualty, including imestigation of the injury and the man's response to it, the tools and methods available

THE UNSUITABLE ENLISTED SEAMAN

WILLIAM K GOODSPEED L t ant C mm d (MC) USNR
WILLIAM B BUCKINGHAM L t na t (MC) USNR
OLIVER N EVANS C pt n, AGC USAR

A TOUR of military duty has become an accepted part of life in these United States for physically and mentally fit young men Fxisting regulations clearly outline the minimum physi cal standards and mental standards are based on the Armed Forces Qualification Test (AFQT) which is a good objective measurement of ability to learn There remains a significant group of men who meet these minimum physical and mental stand ards and who enlist or are inducted into the armed services but who are found to be unsuitable for service and shortly after entry are discharged These men are of no value to the service because during their short tours of duty they contribute nothing to the over all function of the Department of Defense The proc esses of induction or enlistment transportation to Reception Centers initial classification and assignment to training groups issuing of uniforms and equipment trial of duty establishment of the diagnosis of inadequacy preparation for discharge and finally transportation back home—all represent a wasted ex pense in money and effort

In addition to the cost to the Government the effect of this abortive attempt at military life on the person must be considered. These men are on the borderline of adjustment to civil life and the whole fruitless process of entry into and rapid discharge from the service represents a great personal failure. They are left with the stigma of unsuitable while the remainder of the male population is experiencing an emotional maturation in the made population is experiencing an emotional maturation in the same structure. There is no question that these men are not suited for the rigors of military life but their adjustment to civilian life may be jeopardized by an unsuccessful encounter with military service.

From what has been said it can be seen that the interests of the Government and the persons concerned would be best served if these men were screened out prior to entry With this objective in mind a survey of the men who enlisted through this station

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and were discharged as unsuitable for service was undertaken As Hamburg and others have suggested, such persons provide a logical focus for psychiatric screening research.

MATERIALS AND METHODS

The records of all men who were enlisted through this station between November 1951 and July 1954 and subsequently discharged as unsuitable for military service were examined. The records available for review consisted of two groups (1) Pre enlistment papers consisting of an application for enlistment, character and employment references, verification of birth record, police checks, and an Armed Forces Examining Station letter of qualification containing the results of the AFQT and a physical examination and (2) a report of Apitude Board proceedings which in service length of service, General Classification Test (GCT) score, intelligence quotient (IQ) where applicable, and a description of personality and performance while in service A comparison of these two groups of papers forms the basis for this study

During the period of this study all men enlisted at this station were sent to the U S Naval Training Center, San Diego, Calif, for recruit training and we wish to emphasize that the inservice information, including the personality descriptions, was obtained from copies of the Apitude Board proceedings which are sent routinely to the activity at which a man was enlisted These tests and psychiatric descriptions are not our work but that of the Psychiatric Unit and the Apitude Board of the training center at tan Diego

RESULTS

During the period of this study, 4,746 men were enlisted at this station, and 97 (2.2 percent) were discharged as unsuitable for military service

The average age was 18 3 years (with a range of 17 through 28) The parents of 70 men (72 percent) were living together One or both parents of 24 men (24 7 percent) were dead or separated at the time of enlistment No information was available in three cases Ninety men (93 percent) were caucasians, six were Ne groes, and one was not recorded Sixty men (61 percent) were raised in tural areas 34 in cities, and unknown in three The lowest grade completed in school was the 5th, the highest was the 12th, and the average completed grade was the 9th

I ifty eight men (49 4 percent) were in the lowest AFQT group (IV) and were classified as poor learners, 19 men (19 5 percent) were in the AFQT Group III and were classified as average learners seven men were in AFQT Group II and were rapid learn ets and one man was in AFQT Group I and was a very rapid learner AFQT results were obtained on 73 men and the average percentile was 27° Among the 25 men given an IQ test the range in score was from 57 to 103

The average number of siblings was 3 6 (0 to 9) Ten men had an evaluation in one of their three character references that was something less than good or fair Six men had minor police records (mostly traffic violations) and two had poor school or employment references

One man was in the National Guard and one was in the naval reserve but neither had had active duty one was in the National Guard and had served two years on active duty with the United States Army and one man had spent three years in the Maritime Service during World War II

The results of the data obtained while in the service reveal that the average length of service was 58 5 days (14 to °34) and the average GCT score was 39 2 (2° to 66) The psychiatric descriptions listed 68 men as immature 48 as inadequate 3° as dull 20 as dependent 19 as anxious 19 as hypochondracal 11 as schizoid eight as bostile and three as offemmate Most men had more than one of these terms used in the description

Thirty seven men (38 percent) were observed to be enuretic. This porsisted in spite of frequent wakings during the night Four men were absent without leave during recruit training two were somnambulant and two attempted suicide.

DISCUSSION

This study was undertaken with the hope that a companison of the two sets of data would reveal some basis for rejecting men unsuitable for service prior to entry. From a theoretic standpoint such a basis for screening unsuitable applicants should heave the following characteristics: (1) No applicants should he rejected who would make a successful adjustment to military life (2) the screening process should be easily applicable to large numbers of people and capable of uniform interpretation when applied at various locations throughout the country and (3) the screening process should be of such character that it is applicable both to those who are motivated to enter the service and to those who are opposed to it.

The general conclusion of other investigators has been that each person's performance prior to entry into the service should be screened before induction. The data routinely collected consists of police checks and character and work references. These records show minor defects in 18 of the men examined in this

study thus stringent scrutiny of the records might have prevented the induction of 18 percent of the men in this group. It is not known, however how many suitable seamen might have been rejected through such a screening for similar minor defects

On superficial inspection, it might seem that enuresis would be a good reason for rejection. It should be noted, however, that all 37 men who were discharged as enuretic failed to give a his tory of enuresis at the time of enlistment. After entering the service these men claimed to be enuretic prior to enlistment, but because they desired to enlist they concealed this information at the time of enlistment. For men who were motivated to remain out of the service, it would be simple to assure rejection by claiming to be enuretic. Thus a history of enuresis would be a poor basis for rejection because it could so easily be claimed by those desiring to be rejected for service.

Adequate screening might be accomplished on the basis of a careful search for the personality characteristics described on the Aptitude Board records The most frequent characteristics were immaturity and inadequacy. We do not know how many immature* and "inadequate" men were able to make a successful adjustment and are now contributing to the defense of the country Because the average age of the men in this study was 18, it is to be expected that many of them will be labeled immature. The process of recruit training has been a stimulus to the development of maturity to many in the present generation of American men and it would be unwise to reject all men who evidenced immaturity. This might be a basis for rejection if the degree of immaturity could be accurately and objectively measured, but we know of no such test.

The problem might be solved by more careful scrutiny of each man s preservice achievement but there are many practical difficulties. These men are very young and have not had time to accomplish much before they enter the service. The obvious failures are eliminated by police checks and character, school, and employment references. The mentally unfit are eliminated by the AFQT, but this does not eliminate those who cannot adjust to recruit training because only 50 percent of these men were in the lowest AFQT group

In short none of the procedures in present use are adequate in screening out these men before they enter the service. More re search is needed on the value of specific tests and procedures which would screen out those who are unsuitable for military service.

SUMMARY AND CONCLUSIONS

Preservice and inservice data are presented on 97 men enlisted in the United States Navy through this station who were subsequently discharged as unsuitable for military service. None of the data contained in this report meets the requirements of an adequate basis for rejection of these men There is a clear need for more work in this field

REFERENCE

L. Hamburg D A. B ki T G d T k A. C P d f mmed p y h tr breakdown m l taty U S. Armed F rc M J 5 625-636 M y 1954

RESEARCH IDEAS ENCOURAGED

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Clinicopathologic Conference

Madigan Army Hospital Tacoma Wash *

HYPERTENSION AND HYPERGI YCENIA

Summary of Clinical History A 36 year old woman (gravida o, para 3, abortus 1) entered the hospital 11 June 1953, having been referred because of elevated blood pressure and ankle edema during a current pregnancy

The patient's last menstrual period was 4 October 1952 and the expected date of confinement was 7 July 1953 She had had ankle edema for a period of four months, and had been on a salt-free diet for six weeks. Three weeks prior to admission she was in formed by a civilian physician that she had high blood pressure and a three-plus reaction for urinary albumin The physician s records of her last office visit on 6 June 1953 revealed Weight 155 pounds (normal weight 139 pounds) blood pressure 138/88 mm Hg with a trace of albumin in the urine, and 6 to 8 white blood cells per high power field The previous pregnancy, which terminated with the delivery of a healthy girl on 13 June 1952, was uncomplicated except for moderate ankle edema The blood pres sure and urinalysis were within normal limits. All previous preg nancies had been uncomplicated except for one abortion in 1945 at the end of the first trimester. The family history was essentially negative except that the patient's mother died at the age of 58 years of a stroke

Physical Examination The patient was a well developed well nourished white woman who was co-operative and alert Her tem perature was 984° F and her weight 154" pounds Examination of the eyes nose and throat were noncontributory. The oral nucosa and teeth were in good repair. The chest was clear to auscultation and percussion. The breasts were enlarged and the arcolae and nipples were prominent. There was no cardiomegally The heart rate was 92 regular, and the blood pressure was 174% 100 mm. Hig. Normal heart sounds were present. The uterus was

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enlarged in keeping with the duration of the pregnancy. The fetus was active in a vertex presentation, head floating, and fetal heart tones were 140 per minute and regular. The head was pal pable in the left lower quadrant. No other abdominal masses were noted. The external genitalia were negative. Vaginal examination was not performed. External hemorrhoids were present. There was a three plus pitting edema of the feet and ankles. Neurologic examination was negative. The skin revealed no lesions.

D te (1953)	Mg per 100 ml	Date (1953)	Mg per 100 ml
16 June	40 169	29 June	146
22 June	170 40 42	30 June	119
23 June	228	1 July	134
24 June	146, 62	2 July	85
25 June	212 296 300	3 July	118
26 June	188, 240	4 July	200
27 June	166	5 July	97
28 June	168		1

TABLE 2 Blood suga determ nat ons

Laboratory Findings The hematocrit was 39 on 12 June, and 12 days later was 46 On 24 June the white blood cell count was 15,800 with 79 percent neutrophils and 21 percent lymphocytes

Repeated urinalyses revealed a specific gravity from 1 007 to 1 021 albumin from a trace to three-plus, and sugar from negative to four plus Numerous red and white blood cells were seen in most specimens Granular casts were found on 4 and 5 July A Sulkowitch test was moderately positive. The results of repeated blood chemical analyses are shown in table 1 blood sugar determinations are shown separately in table 2

A serologic test for syphilis was negative, as was a spinal fluid culture on 25 June Urine culture (6 July) revealed pseudomonas species, and on 8 July Pseudomonas aeruginosa and alpha streptococci were isolated from a culture of sputum from the traches.

Roentgenograms of the chest and abdomen on 26 June were with in normal limits

Course in Hospitel From 11 to 15 June the patient was placed on a salt-free diet. With a moderate diuresis her weight dropped to 146 pounds. The blood pressure during this period ranged between 174/110 to 156/80 mm. Hg. The temperature was normal.

On 16 June the patient was found at 0800 hours in a semi conscious state She responded to stimulation but was dison ented An examination revealed a left hemiparesis with dimin ished tendon reflexes and an equivocal Babinski sign on the left. The pulse was 100 per minute and the blood pressure was 210/120 mm Hg During this period she perspired profusely and exhibited a generalized slight tremor At 0915 hours the blood sugar was 40 mg per 100 ml and an intravenous infusion of a 5 percent solution of dextrose was started By 1000 hours the blood pressure was 160/110 mm Hg The patient was conscious and moved about freely although she was still somewhat in rational There was no residual paresis and she made an un eventful recovery

On 21 June the patient's condition was considered to be satis factory for the induction of labor The patient was fully prepared for labor when at 0815 hours she had another episode similar to that experienced on 16 June. The blood pressure was 172/104 mm Hg and the pulse 115 She was given 15 cc of a 50 percent solution of dextrose intravenously and a glass of orange juice and recovered promptly without residual neurologic findings. A sterile vaginal examination revealed the cervix dilated 3 cm with 40 percent effacement. The membranes were runtured artificially and at 1400 hours the patient was delivered of a six pound 10 ounce normal male infant

At 2300 hours the patient developed another episode similar to that of 16 June. On this occasion it was associated with a convulsion and come She seemed more confused and irrational with this episode but recovered. The temperature rose to 101 F (rectal) during the day Another crisis similar to that noted on previous occasions was experienced at 0200 hours. The blood pressure was 180/98 mm Hg The patient was seen by the medi cal staff and a firm somewhat movable smooth mass was detected in the left upper quadrant extending nearly to the midline 6 cm below the left costal margin. It was believed that this did not represent the spleen

The patient remained comatose in spite of a continuous intra venous infusion of a 10 percent solution of dextrose and the blood pressure ranged between 195/90 and 160/90 mm Hg She had repeated convulsions most marked on the right side with profuse sweating On 23 June her condition remained unchanged and convulsive movements largely in the right arm neck and face were noted The electrocardiographic findings were reported as follows Rate 140 lowering of T waves P waves merged change compatible with hypokalemia. The blood chemistry varied as indicated under the laboratory findings (table 1) The nationt was digitalized On 24 June her condition was essentially unchanged The deep reflexes were normal Mild sedation was continued The electrocardiographic record was less suggestive of hypokalemia On the morning of 25 June the patient's condition was considered somewhat improved. Later in the day, however, evidence of phlebitis in the right leg developed and her tem perature rose to 105 6° F (rectal) The blood pressure varied from 140/90 to 152/76 mm Hg From 4 to 6 July the patient had numerous bowel movements The stools were greenish and semifluid in character She was irrational during this period and frequently revealed muscular twitching on the right side of the face On 6 July cyanosis was noted and she was placed in an oxygen tent. On 7 July the temperature was 102° F (rectal) and the pulse was 112 The blood pressure ranged between 126/80 and 152/76 mm Hg During the patient s entire febrile period, streptomy cin and aureomycin had been given without apparent therapeutic effect On 8 July the temperature was 103° F (rectal) and the pulse had increased to 160 The blood pressure, however, dropped below 80/40 mm Hg and responded only temporarily to a con tinuous intravenous drip of norepinephrine During the afternoon of 8 July the patient's diastolic blood pressure continued to drop and there was marked cyanosis of the skin. The patient was pronounced dead at 1535 hours, 8 July 1953

DISCUSSION

D ctor B tz Would you show the roentgenograms Doctor Shippey?

Doet r Shipper We have a toentgenogram taken of the chest on 26 June 1953. The film is essentially normal. No evidence of consolidation is present within the lungs. A flat film of the abdomen shows a small amount of gas in the bowel but there is no evidence of calcification or obstruction. We fail to outline sufficiently the clinically reported tumor mass.

Do t B tz. Doctor Dickerson will you present the interpretation of the electrocardiogram?

Doet r D eker I think these electrocardiograms are of note par ticularly by reason of what they don't show and by reason that what they establish had not occurred prior to this patient shospitalization For one thing you can say that this patient did not have heart disease insofar as one might have expected a possible history of hypertensive cardiorascular disease in the past. The record in no way suggests long straining hypertension On 23 June there was an apparent prolongation of the Q-T interval which is consistent with but not diagnostic of hypokalemia. The next two days there appears to have been improvement

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but then comes 26 June and m thing clearly happened at that time This is one of the circumstances which is not too frequently encountered in clinicop thologic confe enc s where inste d of asking you c n y to the pathol gist Dd you find the pulmonary infarct? There were upright ORS complexe in le d I on 22 23 and 25 June and then they were clea ly reversed n 26 June The electr cardiograms als reveal d a tremendous degree of right a is deviation on that d te and the f ct th t this was not an reefact was att ted to by the slow but gradual re turn toward the norm I peture There was some improvement on 29 June and by the time of the last tracing on 6 July the record was much like the normal init I t cing of 22 June So gan n umm y thi patient had not had a l ng h tory of hyperiensi n. The e w s nothing to sugg t c rdiovascular r nal d ease so far as it might have been reflected in the elect ocardiogram Finally there is evity reason to belie that on 26 June the patient suffe d a pulmona y embol m. The prolongation of the Q-T interv I is regarded as consist nt with Itered el cirolyte balance a attest d t by the low serum por

D B + Dr Woolle tt would von discuss the differe ti l di gnosi

D + W II to The story of this woman's illness f llows a r pid nd or gressive course beginning with ymptom of toxem a a d pro gre s ng to convulsive track which occur ed epeatedly and uncon trollably until the de th of the pati of The was no previous h story of es attal hypertens on o tracks imila to those described during hrp entillness

There re s veral feature we mu t expl in by our diagno s a this case-th hypertens on th convul ve tt cks the n ur l g c signs h art fa lure th abdominal mass nd ome rather bizarre labo at ry findings The fit and most byious dag os to co der i eclamp a Eclamps could have econted f the hypertension the swilling the strok like pisod s and the heart f ilure But there i no way of explaining the mass in the left upper quadra t with that di guosis Fr this reas n I am going to dismiss the diagnosis f eclampsia at least as prim y diagn sis and because the mass in the abd men is the trik ng clin cal find ng in this ca e I m goi g to anchor my dif fere tial di gnosi around t

The mass was de cribed a smooth movible and located in the left upper quadrant of the abdom n extending almost to the midli e 6 cm below the cot I magn What organs o tissues could cuse a ma of th s description?

The poss bility of a pelv c tumor perh p a parasit c fib oid should be considered I know of no way t rule this out However pelvic ex am nati ns were apparently egati during her preg ncy The med cal

¹ L Phip Wooll | MC USA 1

officers in attendance believed that the mass was not spleen There mas no lymphesdenopathy or blood changes to suggest lymphoma or hypersplenism Likewise I shall exclude tumor of the stomach because there is nothing in the woman's history to suggest that diagnosis What about the liver? From my understanding of the position of the mass it would not likely be liver although presumably a tumor of the left lobe of the liver particularly if cystic such as in hydatid disease might protrude into the left upper quadrant but its true nature can usually be perceived by virtue of its descent on inspiration What about tumors of the kidney? The only tumor of the kidney I would consider in this case would be carcinoma or hypernephroma Hypernephroma of the kidney which is the most common kidney neoplasm in adults might very well account for a mass of this size in the abdomen There was microscopic hematuria to support this diagnosis. Against a diagnosis of this tumor is the fact that hypernephroma is rarely found before the age of 40 years and it is twice as common in males as in females Also there are too many clinical aspects of this case left manswered by that diagnosis

What about the pancreas? Pancreatic cysts are palpable in nine cases out of IO and are usually found in the epigastrium to the left of the midline they could account for this mass as could cysts of the omentum and mesentery. The latter are characterized by spherical shape and extreme mobility. Neither of these diagnoses seems likely in this case. Carcinoma of the pancreas I shall likewise rule out A car cinoma of the pancreas of this size would probably have produced other signs of miligiant extension or metastasis such as jaundice.

What about adenoma of the islet cells of the pancreas? These are usually small rumors but have been reported as large as 13 by 15 cm in diameter. I was not able to find a case of palpable islet cell tumor in the literature but there are three case reports of islet cell adenoma in the literature our trace are the constitution of interesting of the literature 2 in 1946 Pompen and others reported a case in Holland which bears a striking similarity to this case in many respects. Their patient had repeated episodes of loss of consciousness perspiration blurted vision slurred speech mental confusion headache elevated blood pressure of 150/100 rim Hg and a transient bemipatesis. These attacks in their patient were associated with depression of the blood sugar below 50 mg per 100 ml Glucose tolerance tests resulted in blood sugar values as high as 257 mg per 100 ml thus it would appear that the high blood sugar levels as in our patient would not necessarily rule out islet cell tumor Cattell and Ratten' have pointed out the fact that the so-called flat glucose tol erance curve long associated with organic hyperinsulinism is not a constant and teliable finding Between our patient and the patients with islet cell tumor complicating pregnancy in the literature there are some interesting discrepancies All three cases in the literature oc curred post partum. The patients symptoms were telieved during the pregnancy Their symptoms had been thought present prior to preg

nancy and thi blood sugar levels were at some time much lower than in our patient— s low as 20 mg per 100 ml

This wom n however had may linc! gn and ymptoms of hyper nsulinism First of all she had hyp glycem a 40 mg per 100 ml on o occasion and 50 mg per 100 ml on two others. Secondly she had the clinical fatur of evere hyp gly emic attack—tachyc rd fai the s sweating convul ons d coma Her first attack occur d in the morning presumably following over night fit. The istypical of a hypoglycenic attack. Thirdly the patient's section to tack r ponded alm t mmed tely to 15 cc of 50 p cent solution of dextro e a d o ge ju c Th's is cheater at of hyper n ulinism caused by let cell tum. The three criteria the hypogly ema below 50 mg pe 100 ml the lin l att ck of hypoglycemi in the f t ng tate nd the tapid rec very following the administr t of dextr e nd suga te th s used by Wh pple sa guide f determining which p tient t quite urg c l xpl ration Conn has mpha z d th t when the p v ous dit ha been normal dep es n f the postabs rpt v bl d uga al below 50 mg per 100 ml me n hyp n ul n m with but f we cept us H goes on how we to post ut th ta level below 50 mg per 100 ml not too mportant if the bl od s mple taken fol l w ng seve al d y of subnormal c rbohydrate intak w c nnot rule out the latt nour put at Duncan states th t in t ue slet cell tumor produ ng hyp sul sm the blood sugar will usu ily e h levels s I wa 35 mg pr 100 ml at some tim dur g th ll I let c ll tumo m ns a pos ible diagno n the cale mainly becouse it be to ple the hypogly m p od

Against the digo of let cell tumor is fit fall the III teell tumo a ly ligger than 2 to 3 cm dimetr. Seconly and this ery ump tit be we no low blood suga vilue ding to last two we ks of the patient sill so dipit the fact that show as baving repited attacks. The dly we would hive to did a second diagit forcems to plinth hypertensi. Furthly it wild be layil teell tumor thit wild llow the blood sight to so.

So f n d n t choo the islet cell tumot how l e are we go ig to explai thi patients l w blood suga lev ls? What oth conditions may cause hypoglyceria? Se r l vet dise e a nossibility. This patie t l d a ever l of the lbum n globuln rat w th marked d pr s on of th albumin f citon, a labil blood sugarl v l follow ag the ntraveno dm t ton of dextrose f nd in live d ase but he had n h to y f j unde oer other sign o symptom of liver d e e No l vet funct n t sts r port d in the p tocol. Hyp funct on of the ade l c rtex can produc hypoglycemia b t this p t t clinic lly lad n thing to uggest Add n a disease Hypop tutatism may cause hypoglycemia. We have the g to upoort pituit y disease in this pa t ent. The eare will love tigen grim. Her p egnancy its lif mak s

pituitary dysfunction unlikely Hypoglycemia may be caused by functional hyperinsulinism. It is found in persons with anatomic nervous system imbalance. Pregnancy and lactation per see have been recorded as causing hypoglycemia. A possible explanation of this patient's hypoglycemia may be either an insufficient carbohydrate intake prior to her admission or while she was on a salt free diet or a functional hypoglycemia be the result of her pregnancy. The possibility should also be mentioned that the hypoglycemia may be the result rather than the cause of the convulsions. Hypoglycemia does occur following epileptic sei zuries for example.

What about adrenal tumors as the cause of this mass? There is nothing to suggest a carcinoma of the adrenal cortex in this patient Carcinoma and the functional tumors of the adrenal cortex rately become large enough to be palpated in the abdomen. The only adrenal tumor which I shall discuss the only adrenal tumor that does become large enough to be palpated is the tumor of the chromaffin cells of the adrenal medulla pheochromocytoma Pheochromocytomas may grow to a large size and occasionally can be palpated through the abdominal wall Six patients with pheochromocytoma complicating pregnancy have been reported This tumor is usually manifested by paroxysmal attacks of hypertension alternating with normal blood pressure levels however sustained hypertension has been reported in almost half of the patients The attacks are caused by the discharge of epinephripe and norepinephtine into the systemic circulation from the tumor These attacks are sometimes provoked by massage of the tumor bending forward or backward injections operations and sometimes emotional stress We can well understand how manipulation of this gravely ill woman during and after her delivery might have precipitated an attack. It would be interesting to know if this woman had had previous attacks of palpita tion headaches or faintness before her pregnancy there is no informa tion in the protocol suggesting these symptoms. However, I would sus pect their occurrence if this woman had pheochromocytoma

This woman's attacks are characteristic of this tumor hypertension faintness headaches sweating the pale cyanotic skin and the dysp nea and glycosuria. There is no mention of precordial pain which is often present. The pulse may be greatly accelerated but very often is not Brachycardia may occur and has been reported. The hyperglycenic levels during the last two weeks of her life are characteristic of pheochromocy toria and may be due to epinephrine. Cardiac failure is the most common and one of the most serious sequelae of pheochromocy toria. This woman apparently had signs of heart failure and was digitalized. I would feel much more secure in the diagnosis of pheochromocytom if a benzodiozane or histamine test had been performed. A toentgenogram of the abdorner was reported as negative Roentgenographic examination following perirenal air inflation is useful to out

There is no way that I c n be cert in that the woman did not have both pheochromocytom and t emia of pregnancy Bowen and others in their report of a ca e of pheochromocytoma complicating preg ney po nt out the obvious similarity between these two syndromes a d the fact that the pheochromocytom is usually found in women between the pes of 20 to 40 year —that I the child beating er

I believe the abdom nal mass was a pheocfromocytoma I do not bel we this p tent h d a p mary te l dise se alth ugh the a topsy may prove me wong The urnalysis n the first dy of admi on ws es ent lly normal Term nally she h d a urnary tract nfect; n as well a a possible colitis or nterocoliti. The symptoms of the l tter however the d trhe with watery stools may ha been the result of aure mycin thr py The p tent p bably had a te minal boncho pneumonia Th mbophleb tis also occured There was a p ibl ty Iso of a pulmona v tofar t although the p tient had no clinical igns to sugg t it uch a hemopty s or udden chest p n. How yer the electrocard ograph c find g b ought o t by Doct Dickerson dd more light on this d gnosis This woman w bedridden and grav ly ill I believe thes if crous p cesses we like alt in n alre dy fatal wound I believe the caus of death wa a ce ebral v scul r a c dent p bably cer bral hemorrhag uffer d durt g o e of her hyp t nsi e ep odes C reb al vascul ccident usually do t caus sudden death except with ruptur of a l g basilar neurysm I believe she pr bably h d a ebral h morrh g befor her d th Th nereas d resp r tory nd pul e rate nd the rise in temper ture are char cteri t c of th last 24 t 48 hou of life foll wng a f tal c bral va cul r coid at The transient levation of the blo d sug the glycosuria and Iso the Ibumin and its in the urine are compit ble with a cere b va ular ac dent The hypokalem w probably de to the duresis as crated with prolong dit venous admi strat n of dixtros in the abs nce of deg te or t n and salt intake I do not believe the low potas ium w resp nsible f r the sig of he rt fa lure although it was probably nage vingfact

Dr Woolle tt s d gnos s

- 1 Pheochromocytoma left adrenal
- O Cerebral hemorrhage and heart failure

D + D k I am ut ous s to why so mu h attention was paid to thi abd m nal m ss Thi woman came to the h spit l on 11 June and was not fou d to have the mas. She became g vely ll nd was deli ered but still it wan t discov red Two weeks after admission when med cal con ultat on w requ ted som body on the medical st ff id that they thought they felt an abdom I mass which didn t show in the roe tgenograms. Is t that a kind of red herring?

D ctor Woollcott Well my thoughts on that were that the abdominal tumor described here was there all the time While the woman was pregnant and before delivery the fetus was in the anterior portion of the abdomen and the tumor if it was a pheochromocytoma was retro petitioneal After delivery with the expulsion of the fetus and contraction of the uterus this tumor may have come forward to a position where it could be palpated

Deto Scheyer I think we should congratulate these interns for their very subtle study of this case. They found almost everything that could be thought of and make it difficult to discuss the case further. It was said that we should think of a pelvic timor which was felt in the upper part of the abdomen as having connection with the genital organs. Usually we do not find an ovarian cyst so far up in the abdomen but I remember one patient in whom one was encountered. The only ovarian timor that I know of which might affect blood pressure or blood sugar is an arrehenoblastoma. I agree with Doctor Woollcott that the possibility exists that pre-eclampsia and eclampsia existed together with this timor which most likely took origin from the adrenal gland.

Diabetes mellitus also has a tendency to produce hypertension and mimic the symptoms of pre eclampsia. In addition there is a very high percentage of diabetic patients who develop true toxemia. In association with diabetes himmelstiel Wilson syndrome a specific renal disease associated with long-standing diabetes should be considered. In this syndrome we find intercapillary glomerulosclerosis with non-inflammatory focal fibrosis of the glomerular tufts. The chief clinical symptoms are moderate to massive proteinuria hypoproteinemia edema and hypertension in combination with diabetes. To exclude this possibility ophthalmoscopic examination would have been helpful because in long-standing diabetes the fundus usually shows angiospastic phenomena with restriction of vision. There is no doubt that some of the symptoms we find in this case could have been caused by a hypertensive crisis.

I believe a tumor of the adrenal gland was the cause of this patient s symptoms. It has been stated that in pregnancy pheochromocytoma causes severe pre-eclampsia or eclampsia which is always connected with some degree of shock. A feature that was not mentioned before about pheochromocytoma is that there are two different clinical groups. One group has periodic hypertensive attacks and the other group has periodic hypertensive attacks and the other group has periodic hypertensive attacks and the other group has periodic hypertension at least six pheochromocytomas and still more tumors of the adrenal cortex were found.

I usually use the phentolamine methanesulfonate (regitine methane sulfonate) test to help with the diagnosis. Phentolamine methanesulfon ate is a potent anti-adtenergic drug whose pharmacologic action facilitates the diagnosis of pheochromocytoma. It is also used for interim

Lt Col H as Eg a Scheyer MC, USA Ass sta t Ch f of Ob t trics ad Gyne-

medical m as ment of p tients with pheochromocytoma to n v t p roxysmal atta k p rt def n tive surgery

D + H + I am ure we all have seen patients in whom a post partum convul on may be the e ult nd only manifestation of a post p rtum eclamps: This usually occur within few hours of delivery bren occur as It as three or four day I ve een had h first convuls; n on the third postpartum day Ce tai ly cl mos is a diagnous to consider and I would not dismiss it as lightly as did Doctor Woollcott Fdem hypertension and con ulsions definitely point tow d that d se se Aga not this diagnosis the mass which w s p esent the fact th t the p t nt had previous normal preg ncies a urine rel tively fre of Ibumin carbon do id within normal limit episodes of hypoglyc mia and hyperglycemia a d the f ct that the d e se progres d n spite of treatment and evacuation of the uteru

A ther possibility which I do not believ ha been mentio d specifically is essent I hyperten on with superimposed tox ma Again an ad quat urine co cent ton nd a normal blood urea n trogen the f ct that sh had an averag siz b by nd that the mass was pesent would milt te gainst th d gn P ncreatic tumor and hyper ephr ma a w ll as cerebr l tum all possib lities how er I think they to so rarely a s ciated with pregnancy that this cin be dismissed Dabetes soc ted with toxemia is a pos bility. It is very ommon that a di b t c mother will de el p t xemi during preg n ney The convils is which the patient hid may have represented diabet c oma or insulin shick. Thus pheoche mocytom remains the diagn sis f choice The ge of the patient the ttacks of hyperten i ssociated with changes i blood sug r lev ! the sweating and tr m ors a d f lly the result t neurologic man f tations reinf op n on Th phentolamine meth ne ulforate t st Doctor Schey sp ke f or the benzod o ne test which I am more f m li r with would have help d in the diagno Bowen and associates as m attorned by Doctor Woollcott have report d one case of ph ochromocytoma in pregn ncy They empha zed that the similarity between phe chromocyt m nd toxemia i so close that it almost impossible to differentiate the two entities A f s the chemical test are concern d they mintioned the us of the hist mine tetraethyl mmon um chloride p eph ne insen t ty nd benz d xane test. None of the e te ts was perfo med in our ca except unknowingly the ep nephrine n sensitivity test At ne time the pat nt was given notepinethrine intray nously and yet h dd not re pond ve y well If the clini ian had been more alert he might have given a hint as to the patient's difficulty One must ge with Doct r W ollcott a to the final d gnamely that h had a pheoch mocytoma with e or m re cereb ovas ulat accidents

Cap HwdH MC USA for ly A Ch f f Ob nd Gy e-1 gy Se vi

Oo t r Butz Does anybody have any remarks in addition to or in con flict with any of the ideas presented? I would like to ask a question now The clinicians knew the patient had a mass in the abdomen What was the one thing that could have been done if her physical condition had improved?

Doeto Horn r Exploratory laparotomy

Doet r Butz. That s right An exploratory laparotomy was imperative. The question was how to enable her to tolerate the procedure. This was never accomplished The benzodioxane test is very fine but not all ways safe in a moribund patient. Now I would like to ask another question. What is the difference between epinephrine and notepinephrine physiologically?

Docto Woollcott I am not certain of that but epinephrine increases cardiac rate whereas notepinephrine has less effect on this There may be a mixture of the two and the tumor may secrete one predominantly over the other which explains the variation of the pulse rate in these patients with pheochromocytoma

Docto B + That is right in addition to the fact that notepinephrine does not influence basal metabolism or glycopenolysis

Doet r Horn r Would Doctor Dickerson comment on the change from hyperglycemia to hypoglycemia assuming that the patient had a pheochromocytoma?

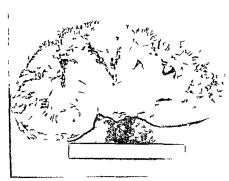
Does Dick rso Yes I think that is essentially a manifestation of normal function of the panceras that has been described It is basically the compensating reaction of a suddenly stimulated panceras. For example in children coma is occasionally observed when the only obtainable history is that the youngster surreptitiously are a whole jar of preserves alone i e his panceras has secreted an excessive amount of insulin because of its sudden profound stimulation

PATHOLOGIC FINDINGS

Doet Butz. At autopsy a large pheochromocytoma (fig. 1) of the left adrenal was found This tumor weighed 690 grams. The left frontal lobe of the brain showed many foci of the ischemic necrosis accounting for the right hemiparalysis. There was a thrombus of the right tubial and femoral vens and the right metrine vein A large embolius apparently from the right leg was lodged in the left pulmonary artery. The kid news exhibited lower nephron nephrosis (fig. 2) and minimal hyper tensive vascular changes. There was a moderate cardiomegally Close examination of the pancreas revealed no adenomatous islet cell hyper plasta. The mechanism for most of the clinical findings is apparent. The hypoglycemia however is not easily explained in most cases of pheochromocytoma there is hyperglycemia if there is any detectable change in glucose metabolism. In two instances there was a one and



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four hour lag between the onset of symptoms and the time the blood sunar was drawn. It is conceivable that the patient's glycogen store was low and that the episodes were initially associated with a hyper glycemia By the time the blood was drawn however the excessive epinephrine stimulation had long since been removed and a rebound drop in blood sugar resulted. The low blood sugar may have been a cause for some of the symptoms which would therefore have responded to dextrose given intravenously. The mechanism of death in this case undoubtedly includes several factors First the pulmonary embolism second probably the exhausted state of the heart and third the pos sible over all exhaustion of the body and decompensation of the alarm reaction

Pathologic diagnoses

- 1 Pheochromocytoma left adrenal
- 2 Pulmonary embolism, left pulmonary artery
- 3 Lower nephron nephrosis"

Doctor H rner- Was the tumor chemically analyzed?

Doet + Butz Yes We sent it to the medical laboratories of the Army Chemical Center No pressor amines were demonstrated in the tumor however the tumor got to the Center 17 hours after it left this hospital It was unfrozen and it was believed that the pressor substances may have undergone destruction

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Authorship cannot be conferred it may be undertaken by one who will shoulder the responsibility that goes with it To a responsible writer an article with his name on it is the highest product of his mind and art his property as nearly flawless as he can make it founded in his character and evidence of it

⁻RICHARD M HEWITT M D

in Jou nal of Am rican Medical A sociation, P 477 Oct 7 1954

ARMY MEDICAL RESERVE OFFICERS TO SERVE ON ADVISORY COUNCIL TO SURGEON GENERAL

A council of five general officers from the Army Medical Corps Re serve to advise the Surge in General on matters related to the medical reserve his been appointed by the D partment of the Army Major General George E Armstrong the Surgeon General of the Army welcomed the officers invited to form the council at the initial meeting recently in his office He declared their advice would be oght on specificeserve items high farteaching impact on the health profession of the nation a well as on those problems concerning the general activities of the Armys medical reserve



R eru offic f the Army M disc l Cop hown with Surg G I Gorg E. Am tong c ter a (l fit ght) B gadee G er l Al de Marbl and I S. Rad n, Colonel J m B M m, nd B gadier G er l Pr H Log H Id G S bie nd F nk E W Ison.

The council members include Petrin H Long M D College of Medicine Stee University of New York Alexander Marble M D Joslin Clinic Boston M ss. I S R vdin M D University of Pennsylvani School of Medicine Philadelphia Harold G Scheif M D University of Pennsylva a Gr duate School Philadelphia and Frank E Wilson M D Directo of the Washington Office of the American Medical Association.

M tings of the c uncil are ch duled to be held in the spri g and fall of each y at the scope of such conferences to r nge fr m procurement of re erve perso el to the use of professional reserves

Treatment of Nonunion of Mandibular Fracture

CHARLES C ALLING Major DC USA

In the course of bone repair, the most common local causes of nonunion of fractured fragments are (1) lack of apposition, (2) movement of the fragments, and (3) infection. This last-named cause is illustrated by the case presented herein, in which adequate closed reduction of a fractured mandible and a clinically well controlled postoperative course failed to result in bony union. In addition, apparent roentgenographic evidence of two lines of fracture when only one evisted constituted an interesting problem in roentgenographic interpretation.

CASE REPORT

In 1949 a 24 year old soldier was admitted to this hospital four hours after he was involved in an automobile accident. He had not lost consciousness and was well oriented Constabulary troopers covering the accident had observed the patient for shock, checked the vital signs, and administered 0 032 gram of mor phine sulfate On admission he complained of inability to "close the front teeth together," but had no acute pain or respiratory distress His past history was noncontributor.

The patient had no abnormal habitus or facies except for a contusion in the area of the right mental foramen Bimanual pall pation and intraoral inspection disclosed a fracture between the right mandibular bicuspid teeth. The second bicuspid was luxated and very mobile. The right mandibular first molar had a large mesial carious lesion. Radiographically, the line of fracture extended toward the base of the body of the mandible in a posterior and inferior arc through the mental foramen. Because the lingual mandibular cortical plate, was fractured anterior to the buccal cortical plate, two fracture lines were seen. Periapical abscesses were noted on both roots of the first molar (fig. 1)

The serologic test was negative, and other laboratory findings were within normal limits

The second bicuspid was removed and a closed reduction of the fracture with interdental continuous loop wiring and inter

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maxillary traction was effected within seven hours after the injury with excellent anatomic results. The patient received 18 mg (30 000 units) of penicillin intramuscularly every three hours for five days and daily irrigations The laceration of the soft tissue at the extraction site repaired itself in two weeks



gur 1 Preptu oetg gmdliglme ffact m diolt ld tion, lxtd ndbuspid and pe iap o first mola

without incident Firm immobilization and accurate approximation were retained during the following six week period (fig 2) When the traction was removed however nonunion was evidenced by the extreme mobility of the bones at the fracture site. There was no clinical evidence of osteoid tissue formation or of a fibrous nonlinion

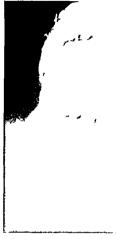
An open reduction with direct interosseous ligation of the fracture site was decided on in the belief that the first molar was providing an avenue of infection to the fracture line and causing a subclinical inflammation Two days preoperatively the first molar was sectioned with burs and removed from the posterior fragment. The continuous loop wiring was allowed to remain on the anterior and left sides of the dental arches An

incision six contimeters long was made one contimeter below and parallel to the bise of the body of the mandible, and the fracture line exposed by sharp dissection. The fracments were freely movable. There was no evidence of a suppurative process.



Figur 2. Roenigenogram show g closed reduction that resulted in nonunion.

Early granulation tissue on the fractured surfaces was removed with circities and bone files. Drill holes were punched through the heavy lower cortical margin of the mandible about one centimeter from the fracture line and equidistant from the base of the mandible. Immobilization was obtained by passing a 22 gage stainless steel wire through the holes and twisting the free ends. The soft tissues were closed in lavers with catgut sutures, and the skin incision was closed with interrupted black silk sutures. In anatomic apposition was obtained (fig. 3)



Fg 3 R tg mog m bow gop d to wth t wir g ult gin bony un n.

Intermaxillary traction was reapplied and clinical evidence of bony union was present after a six week period. The skin in cision repaired with minimal scarring and did not appear ob rectionable

COMMENT

The three major causes of nonunion of fractures-lack of apposition movement of the fragments and infection-by no means comprise the entire list of factors causing this condition as such a listing would include a multitude of constitutional causes and a more definitive enumeration of local factors Be cause this young soldier had no history or clinical evidence of a major constitutional or systemic disease it was concluded that nonunion was secondary to a local factor Fry and others describe a number of avenues to a fracture site which infection may follow to cause an eventual nonunion Their reasoning leads me to suspect that the causative agent in this patient was the abscessed first molar, because the only material difference in the second phase of treatment was its extraction

A fine point in the interpretation of radiographic film is raised by the apparent existence of two lines of fracture Matthews' described this phenomenon "It must be remembered that only the cortex makes very much registration on film we will have what appears to be two break is on the bias separate breaks . The routine use of radiographic examination from several angles would help preclude misinterpretations of the actual character of the fracture site In this instance an occlusal radiographic projection proved that there was a single fracture line traversing obliquely through the mandible

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WANTED MORE SPECIALISTS FEWER GPS

Recently there has been among our medical students a desire to go into general practice. This is the result of the advice they have re-Nevertheless there has never been a time when there is cerved less need for general practitioners than today. With the growth of our country the population has become more and more condensed Sparsely settled areas are less frequent With our roads and rapid transportation medical centers with various specialties represented can supply a far higher level of care than can be given by an equal number of general practitioners Most often the internist will be the family medical ad viser because of the greater frequency of ailments of short duration

Our need in this country at the present time is for more specialists grouped in centers wherever the population is sufficient to support several doctors This would make for a higher level of service. The need for general practitioners is diminishing and the trend of our medical students toward general practice is unfortunate and short sighted I believe it will be short lived

> -HOWARD C NAFFZIGER M D in Annals of Surgery P 265 Sept 1954

Giant Cell Tumor of the Sacrum

RALPH P CAMPANALE L t na t C l l USAF (MC) WILLIAM J REALS C pta USAFR (MC)

BENIGN gant-cell tumors constitute about 10 percent of all neoplasms of bone and occur most frequently in the long bones of young adults The vertebral column is infrequently and the sacrum only re ely mentioned in numerous reviews of this tumor — in 1953 Hays was able to collect from the literature only 24 cases of gnant-cell tumor of the sacrum and added one additional case report. The rare occurrence of this tumor in the sacrum is believed to justify reporting additional cases.

CASE REPORT

This 24 year old airman was admitted on the surgical service of this hospital on 18 December 1952 because of severe pain of four months duration in his lower back which radiated down his left les.

Present Illness The patient had experienced the pain sud denly after sliding into a base during a baseball game Outpatient care from the day of injury to about one month prior to admission consisted of local heat massage and diathermy to the region of his lower back. A roentgenogram of the lower back had been made but the patient had not been informed of the findings During this three month conservative treatment the patient noticed the gradual onset of constinution which became increasingly severe and progressive difficulty in initiating his urinary stream associated with the sensation of an inadequate emptying of his bladder at the completion of the act of voiding He occasionally voided while sleeping About six weeks prior to admission he began to experience attacks of severe lancinating pain which radiated down the posterior aspect of his left thigh into his left leg as far down as the ankle region. He became aware of mability to obtain an erection and of numbress of the skin in the region of his genitalia. One month prior to admission to this hospital he had been hospitalized at his local medical facility and subsequently had been transferred to another hos pital where he was placed on a neuropsychiatric ward for psychi atric observation. He recalled that a rectal examination had been

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performed, but that no further investigative measures were ac complished One week prior to admission to this hospital, while on convalescent leave, he experienced pain of such severe nature that his family insisted on complete examination by their family physician. On rectal examination the family physician noted a tumor mass and had roentgenograms made of the lower back and sacrum. The patient was then referred to this hospital for further evaluation and treatment. He had lost about 35 pounds in weight during the four months of his illness. Complete systemic review was otherwise noncontributory.

Physical Examination The patient was well developed and well noun hed but appeared to be acutely ill He walked with obvious distress holding his left buttock with his left hand with a moderate scoliosis to the left. He weighed 142 pounds, his temperature was 98 6° F pulse, 76 per minute respirations 20 per minute and blood pressure 118/70 mm Hg The heart, lungs and abdomen were normal Rectal examination revealed a moderately tender firm five- by eight-centimeter mass in the retrorectal region between the rectum and the sacrum Pressure on this mass cansed an exacerbation of lancinating pain down the posterior aspect of his left thigh into his leg. \eurologic examination revealed saddle hypalgesia involving segments from S-2 to S-5 on the right. The knee jerks were accentuated slightly bilaterally and the ankle je ks were markedly diminished bilaterally the left more so than the right. The plantar reflex was extensor in character bilaterally the left more so than the right. Muscle tone was increased in both legs

Laboratory Findings Red and white blood cell counts, hemoglobin hematocrit urinalysis serologic tests for syphilis sed-inentation rate blood urea nitrogen fasting blood sugar blood chloride blood CO, combining power acid and alkaline phos phatase and complete liver profile studies were entirely within normal limits Dynamic pressure of the spinal fluid was normal. The spinal fluid revealed, four lymphocytes per cc, glucose, 76 rg per 100 cc chlorides, 114 o mEq /L, globulin two plus total protein 90 mg per 100 cc The colloidil gold test showed a normal curve

Roentgerographic study of the sacrum (fig. 1) revealed destruction of almost the entire sacrum below the level of S-1 The porterior cortical layer was pre-erved. The interpretation of the attending roentgenologist was that the lesion represented a turnor process originating in the sacrum which had broken through the anterior cortical aspect of this bone. Roentgenographic findings of the chest, skull and long bones were normal

Course in the Ho pital Procto_copic examination was ac complished to the 12 cm level attempts to pass the instrument

Surgical removal was the treatment of choice in our patient because the lesion was extensive with an existing cauda equipa syndrome Postoperative irradiation therapy was carried out because of muscle invasion and extension of the tumor along nerves and fascial planes

The patient has had a very gratifying result with a complete relief of pain and no evidence of tumor recurrence 15 months after initial treatment

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A NEW COUGH SUPPRESSANT

D tro-3 methoxy N methylmorphinan hydrob omid (Ro 1 5470/5) a new ant tussive gent wa dministered to 183 pat nts of wh m 39 are t included n th appr isal of its merits as a c ugh uppres sant Tw nty even of the e I tter subjects had no co gh nd were giv n the drug sol ly for the purpose of determi g it toxicity on or I nged admini tration Of the 144 instances i which the anti tus ive effectivenes of Ro 1 5470/5 was studied 107 h d pulmonary tuberculosis 22 bronchiti eight bronch ect is four bronchial asth ma two lu g bscess and one bronchog nic c rc noma Results were as follows 23 pats nt (15 9 pe c nt) had no to slight relief of co gh 67 (46 5 perc t) derived m derate and 54 (37 5 percent) m rked to complete rel ef of cough Single dose of 15 mg q d were po d ctive of better r ults than 4 mg doses

> -NATHAN RALPH M D Ame Jurnal 1th Md 1S nc

p 302 M 1954

Benign Chondroblastoma (Codman's Tumor)

Case Report and Review of Literature

JOSEPH M OPPENHEIM Captain, MC USA ROBERT W BOAL Colonel MC USA

BENIGN chondroblastoma is one of the less common lesions of bone, but because of a certain amount of confusion and disagreement in its nomenclature and its occasional unduly radical treatment as a malignant tumor, it is deserving of consideration In 1931, Codman' described nine cases of epiphyseal chondromatous, giant-cell tumor of the upper end of the humerus, which has since been called Codman's tumor, or which pathologists currently call benign chondroblastoma

In 1942, Jaffe and Lichtenstein reported nine cases of this condition, terming it chondroblastoma of bone They emphasized differentiation of this lesion from giant-cell variants, chondrosarcoma, and osteogenic sarcoma, and noted its occurrence in additional sites. They described benign chondroblastoma of bone as starting in an epiphysis of a long bone, with possible extension to the articular surface of the epiphysis and even into the metaphysis as it developed, but rarely attaining a size of more than from 3 to 5 centimeters in diameter. They found the lesion in the distal end of the femure the proximal end of the tibia, and the upper end of the humerus. In their series, the timor occurred more frequently in adolescent or postadolescent males.

The basic tumor cell of the lesion was described as a polyhedral or round cell of moderate size, with a fairly large nucleus. The tumor cells might be closely packed or more loosely ag glomerated, with the presence of focal areas of calcification of the cellular tumor tissue. Wherever the calcification becomes intense the tumor cells swell and undergo necrosis. The necrotic tumor tissue comes to be replaced by hyaline chondroid tissue which subsequently may show spots of ossification. There may be areas of hemorrhage and one may see large vascular sinuses bordered by viable tumor tissue, necrotic tumor tissue, or hyaline chondroid material which has replaced the necrotic tumor tissue. Clumps of large multinuclear giant cells may be

From U S Army Hosp tal Fort Knox Ly

logic diagnosis was benign chondroblastoma of bone " This was confirmed by the report from the Armed Forces Institute of Pathology which added the additional note as follows. The staff is in agreement with your designation of the lesion as be nign chondroblastoma or better yet as a Codman tumor The staff prefers that eponym because chondroblastoms has been used by Geschickter and Copeland in an entirely different mean ing viz that of a quite malignant type of chondrosarcoma which is in sharp distinction to the meaning that Jaffe and Lichtenstein intended when they first coined the term. Therefore, to avoid misunderstanding the staff still uses the term Codman tumor for these tumors All of the main features are present which Cod man described viz the lesion is an epiphyseal lesion it is a grant cell tumor and it produces cartilage hence his term en physical chondromatous giant-cell tumor. In addition this par ticular tumor appears to be in part cystic in character There are several portions of the wall of a cyst and in many places the wall is lined by indifferent stromal cells and giant cells such as may be seen in an ordinary giant-cell tumor. The staff has previously had a cystic lesion of an epiphysis which was thought to be the result of cystic degeneration of a Codman tumor but it could not be clearly established In this particular case the question of the nature of the tumor as a Codman tumor is beyond doubt and therefore the fact that cystic degeneration of Codman tumors can develop is established and a very important point is made by this case

SUMMARY

A benign chondroblastoma (Codman's tumor) of the proximal tibia though characteristic also showed cystic changes After thorough curettage of the lesion and packing with cancellous bone chips from the right ileum the patient regained full use of the extremity

REFERENCES

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4 L h ns L nd Kapla L B g hodrbla mafb uz c f monal capt nd pphy C neer 2 793 798 Sep 1949 5 C p land M M d Ge h kr C F Ch nd bla m nd mal gon Arms Surg 129 724 735 May 1949

PROMOTIONS OF OFFICERS

The following officers of the military medical services on active duty in the Army, Navy, and Air Force have recently re ceived temporary promotions to the rank indicated

Medical Corps

] s F Ad ms Comd USN Wit C. Auy J Capt USAF J me U G thr Capt USAF

Alf do H ld bl Lt Col USA HwrdWHII Comd USN R ben H W e Capt USAF

Dental Corps

R bert M Bla kw od Comd USN Aar NBws J Capt USN El ha Brand n, Man USA J hn C. B w Capt USAF
J ph C. E tt Capt USAF J H bman, J Cometr USN Rdb HH k Capt USAF Wad II T I cks a Lt Col USA T ad il I Jess a LI Col USA
Wil m B J has a J Capt USN
Robert L J ph Cored USN
Theod re A L s y Capt USN
Sdeey C L dman, Capt USN
H w d B M Ki y Capt USN
Albert R Oe t I Cored USN

Wilam W Ou lt J Capt USAF R bert D Ph Hips Comd USN HwidC.R e Capt. USA H man K R nd rff Capt USN J ha J S ha id r Comdr USN R lph H S Sc tt Comdr USN K tph H S Sc tt Comdt USN
R bard C Shaw Capt. USN
R ber D Sol m Comd USN
S m a C Stoop k, Condt USN
S m a W Sas vind Comd USN
H ary E Syzek, Capt. USA
W blur A T k Comd USN
Robe tM W Illiams Comdo USN R be t D Wy koff Capt. USN

Veterinary Corps

Thm AS Hay LICL USA

Jamsk Mahm Lt Col USA

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Medical Service Corps

Nurse Corps

Nurse Corps

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Donald I Hamil a Ist Lt DC, USA Hall H Haym ed J 1st Lt. DC USA L Ray D Ho k r fay MSC USA Walter A H wa d Capt. MSC USA Clarenc Kaplan Capt. MSC, USA Don F Kimm tling Capt. MC. USA Bory Z. Krynycky: 1st Lt. MC, USA Walte Le ch Jr Ist Lt. MSC, USA Milton A. L wi Capt. MSC, USA Jhn F L dato May MSC, USA David P Mand ville Ist Lt. MC, USA Harl a G. V tt Capt MSC USA GI na H McKi ney May MSC USA John J Mor tan Jr Capt MSC, USA Samuel G N zzaro Ist Lt MSC, USA R bert D Pill bury LL Col MC USA Richard S Rand Capt. MSC, USA Ma key] Re 1 Col. USAF (DC) Gordo H. Rhoad s May USAF (NC)

The names foffe is of the ned cale raise who have been award d decorations by th Un ted Stat Army N vy o Au F c are published in the departm at each month f Il wing c prof nformati nfr moffi ial sources - Editor

MILITARY DUTY OF 300 INTERNS DEFERRED. CHOSEN BY LOT FOR RESIDENCY TRAINING

A total of 300 interns have been elected by the Department of De fense for defe ment for one year residencies n 15 medical spec alties e s nt al to the military dep riments. The nam s were dr wn by lot recently from among more than 1 300 non eteran interns whi asked for further def rm nt under the new Arm d Forces Reserve Officer C mmis s ning nd Residency Consideratio Program announc d last September



D Walter B M in, right a dCl IWII mW Re. J MC USA

Dr Walter B M t n pr ident of the Americ n Med c l Association m de the initial dr wing during ceremonies in the office of Dr Frank B Berry Assist t Secretary of Defense (He Ith and M dical) The first n me drawn was that of D W Ili m F R us J Uni ersity of Michigan Hospital t Ann Arbor who plan a r idency in surgery and e pect t tke ares ve commission in the Air Force

REGULAR DENTAL CORPS OFFICERS CERTIFIED BY SPECIALTY BOARDS

The American Board of Oral Surgery

Organized in 1916, the American Board of Oral Surjety is second in size of the seven specialty boards approved by the American Bental Association The more than 300 dentiats certified in this specialty include 21 regular Dental Corps officers of the military services

Charles C Alling Man USA

Raymond E Boudreaux Lt Col USA R cha d 1 Burch Col USAF

J ck B Caldw II Col USA Charles J Cashman Col USA James E Chipps Li Col USA W Iter V Cr we Copt USN

H B ech r D erdorff Col USA Rog r G G ry Comdr USN

Hatold G Gree Cometr USN
R ymo d F H ebsch Cometr USN

William B leby 14 Col USA

Theodore A 1 can y Co wh UVA Joseph & Link Combu UVA Joseph & Link Combu UVA Lowell & McKelvey Col UVA Meritti M Maxwell Capt UVA Meritti M Maxwell Capt UVA Riban Mobnac & Col UVA William B S mms Lt Col UVA William B S mms Lt Col UVA

Raigh & T ylot Rear Adm. USN Atthus Turville Comb USN

Wilbur N VanZile Capt USN

This i the sec and f a set is. The names of offices certified by the American Board fP sthod aucs will be p blished in the March issue

DEATHS

McLEAN Marrin McDugald, Compander (MC) USN U S Naval Hospital Bethesda Md graduated in 1927 from Johns Hopkins University School of M dictine Baltimore Md., appointed Lieutenant Commander (MC) USN 21 August 1940 commissioned Commander (MC) USN 2 May 1947 died 31 December 1954 age 34 in Bethesda of metastatic carcinoma

WILLIAMS Sydney L wrence Commander (MC) UNNR U S Naval Ammunition
Depot Crane Ind graduated in 1927 from New York University College of
Med cine New York Prototted Lieutenant (MC) US IP 7 April 1941 died 20
December 1954 age 52 in Crane of acute coronary thrombos 3

CORRESPONDENCE

To the Edito — I am witting this lett r to acquaint prospective and newly dischaged medical officers from the Armed Forces with the great ned for trained phy iscans in the field of physic I medicine and re habilit ton. The demand for trained medical personnel in this field continue at an ever increasing piece a result of the devel pment and e t inspire of feilitre a diprograms.

There are excellent it nee fill wiships available through the United Stres Public Health Service and the Mational Foundation for Intile Paralys for qualified physician with ninter stiniths field. The need is give t and there are unprecedent eneed procrumatics not only in the chig institutions but in hospitals and in group practice. There presently exists a rare opportunity for the young phy cain who is interested in a mover expanding field.

HOWARD A RUSK M D Dire to
I tt f Phy I M d d R hablioati
N w Y rk Uni rs ty-B fi vu Med l C

To the Edito —The Association of Military Surgeons of the United State at its sixty fir t annual convention held in Wa hingt in D C on 29 November to 1 Dec mber 1954 awarded a Certificat of Mirit to the Armed Forc Medic I Publication Agency for the e c lience of its scientific whilp t.

The certificate is enclosed and is herewith forwarded with plosure and constant tions

ROBERT V SCHULTZ Captain (MC) USN
Cha ma S tif E h b t
A ociat f Mil tary Surge

The dignity f medicine: whit sets t apart from their profession what create confidence of pitent in physician and permits them to entrust their lives to our hands

M ne ota M d ne

GEN BENSON HEADS AERO MEDICAL ASSN MEETING IN WASHINGTON, 21 23 MARCH

Specialists in aviation medicine from the Army, Navy and Air Force will participate in the scientific program of the twenty sixth annual meeting of the Aero Medical Association at the Statler Hotel in Washington, D C, 2123 March 1955, under the presidency of Brigadier General Otis O Benson Jr, USAF (MC)

The first Louis H Bayer Lecture, established in 1954 in honor of the founder and first president of the Association, will be given by John F Fulton M D, distinguished physiologist, biographer, and medical historian of Yale University General Benson has an nounced. Dr Fulton's presentation on 21 March is entitled "Louis H Bayer and the Rise of Aviation Medicine" The Honorable Stuart Symington, United States Senator from Missour, will give the principal address at the annual dinner on 23 March.



john F Fulton M D of Yale U ivers ty will give the f st Loui H Bauer Lecture

Big Gen ral Ot's O Benson Jr USAF (MC) Pesident of the Aero Medical Association

Among the special features of the scientific program, arranged by a committee under the chairmanship of Captain Clifford P Phoebus (MC) USN, are a symposium on space medicine to be conducted by Colonel A P Gagge USAF (MSC), and a panel on flight at extreme speeds and altitudes by a group of the world's leading civilian and military test pilots Military aeromedical scientists on the program include

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21 March

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22 March

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23 March

- Fatal Decompression Sickness in Flight—Rebbit mak to the Vincent M Downey USAF (MC) U S Air Fire Sciool f A laten to cine Randolph Air Force Base Tex
- Factors Affect in the Endwance of Psychon for Skill—Mai R en B Da USAF (MSC), and Georg T Hauty Ph D U R Air Force School f A mu Medicine Randolph Air Force Base Tex
- An Analysis of Methods of GP otect on—Lt David H Lewis (C) NP Aviation Medical Acceleration Laboratory U S Naval Au Deveo — t C ter Johnsville Pa
- Aviator s Oxygen Breathing Devices T ansit on to Va abl 1 teg at 318 tems—Aaron Bloom B S Aeronautical Medical Equipment Laboratory L S, Naval Au Experimental Station Philadelphia Pa
- Oxyg n Wa t Warning Systems for Military Ai craft.—Edward L Mich I M S Acronautical Hedical Equipment Laboratory U S Naval Air Experime tal Station Philadelphia Pa
- Curr nt Dev lopments in Improving Informational P esentations for it. A it P lot—Fred R Brown M S. Aeromatical Medical Fourier all features U S Naval Au Experimental Station Philadelphi P
- Simplify ng the Pilot s Task Through Display Quickent g Irinklin Navkit Ph D and Henry P Burningham A B U S Naval Research I aboutous Washington D C
- A New Look for A: craft Instrum tat on-It Com! Ceorge W 21.v t UN Office of Naval Re earch Washington D C.

THE PROBLEM OF EPILEPSY

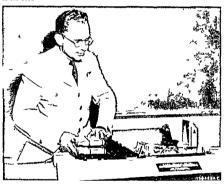
In the entire field of neurology there is no disease of treater importance than epilepsy. This is very quickly realized when one considers that epilepsy is a chronic disease and therefore that the patients are sufferers over a long period of time. Secondly this is studistically a more important disease since one out of every 200 of the total population has seizures. This of course in view of the number of patients as a far greater problem than the neurologist can handle and moreover is a far greater problem than the neurologist can handle and moreover these patients need not and should not be the concern only of the neurologists. The physicians in general practice must be equipped to tologists. The physicians in general practice must be equipped to these patients. It is only the unusual pahandle the great majority of these patients it is only the unusual pahandle the great majority of these patients it is only the unusual pahandle the great majority of these patients displayed the problem that comes within the immediate realm of the neurologist.

-FRANCIS M FORSTFR M D

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p 137 M 1954

AIR FORCE FLIGHT SURGEON ATTAINS SPEED OF 632 M P H IN DECELERATION TESTS

Lieutenant Colonel John P St pp USAF (MC) Chief of the Ae med cal F ld Labor to y Hollom n Air Force Base N Mex on 10 D cem be ched speed of 632 mil be hour while rdig a rck t pro p ll d led to reproduce expo ure t windblast and slowd wn effects experienced by air c ewmen when escaping from aft at superson c speeds In p evious experiments he had tt n d a peed of 421 mile per hour in the ab upt decelerat on vehicle the technical dig tio of the clad



ten t Col I J b P Stapp USAF (MC) and model f the abrupt detxp mettNwMx a bas

Ex rt ng t tal force of 40 000 pounds thrust the nine tockets pro pell d the led to ts t p peed in five cond. Aft the ckt burn down it coast d f less than half a econd before the b ke w applied a d t w abruptly halted Dur g th te t Col n l Stapp w thstood a dec 1 tion force of 35 g d wind pessure fm e th n two tons With the xception of a plast c helmet nd viso h wore no pecial cloth g during the te t

A MESSAGE FROM THE A M A

It is anticipated that a number of legislative proposals con cerning medical care for dependents of members of the armed services will be introduced in the opening session of the 84th Congress For a number of years the American Medical Associ ation has been interested in this matter. There has also been a growing awareness in the medical profession and in govern ment circles of the need for careful correlation of military and civilian medicine

The American Medical Association and the medical profession generally desire that the highest quality of medical care be provided and maintained for the entire population including military personnel and their dependents. It should be clearly understood that the Association is not opposed to the provision of medical care by the Federal government to the dependents of service personnel, if Congress, in its discretion, decides that such care is a proper emolument of military service. The Association, how ever, is concerned with the manner in which the medical care is to be provided

The first legislative action taken in the United States in this regard was the Act of July 5, 1884 (23 Stat. 112) It authorized medical officers of the Army and contract surgeons wherever practicable to attend the families of officers and enlisted men free of charge On 10 May 1943 the Congress passed an Act (Public Law 51 78th Congress 57 Stat. 80) providing medical and hospital care for dependents of personnel of the Navy and Manne Coms suffering from "acute medical and surgical conditions, exclusive of nervous mental or contagious diseases. or those requiring domiciliary care " This law also provided that dependents of Coast Guard personnel should be furnished hos pitalization during periods when the Coast Guard was operating as a part of the Navv

There is no specific Act of Congress pertaining to medical care for dependents of personnel of the Air Force, but the Act of 1884 has been considered applicable

Medical and hospital services were provided for dependents of commissioned officers of the United States Public Health Service

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From th Council o Hattonal Delens of the Am re n M d cal A oci the vi w a dopi was pressed east a c santly the e of the Dep tim t ff) f

by a regulation of that Agency published in 1981. Similar services were provided dependents of Coast Guard personnel by an Act of Congress in 1937 and for those of the Coast and Geodetic Survey in 1939. The dependents of these services are now en tuled under Section 326 (b) of the Public Health Service Act of July 1 1944 (Public Law 410 78th Congress 78 Stat. 697) to outpatient care at Public Health Service facilities without charge and to hospitalization (if accommodations are available) at Public Health Service hospitals only at a per diem charge prescribed by the President.

In June of 1954 the Board of Trustees and the House of Delegates reviewed the policy on dependent medical care At that time the Board recommended to the House of Delegates that medical care should be made available for dependents of service personnel in the following manner (1) By military physicians in military facilities in overseas areas other than United States territories or possessions and in remote areas in the United States where civilian facilities are unavailable (2) By civilian physicians in civilian facilities in all other situations This position was approved by the House of Delegates on 23 June 1954

At its most recent session at Miami in December 1954 the House of Delegates of the American Medical Association again enunciated the position of the medical profession on this subject, by stating if it is to be the policy of the government to provide medical care for dependents of service personnel the services of civilian physicians and hospitals should be used wherever possible to be paid for at prevailing rates with provision for free choice of physicians.

During the second session of the 83d Congress Senator Leverett Saltonstall of Massachusetts by request introduced a bill to provide medical care for dependents of members of the Armed Forces of the United States (S 3363) On 11 May 1954 at the request of Dr Walter B Martin President of the American Medical Association the Secretary and General Manager of the Association Dr George F Lull sent a letter to Senator Salton stall Chairman of the Senate Committee on Armed Services outlining the actions and position of the American Medical Association with respect to medical care for dependents of members of the armed services Dr Lull stated in his letter that in the event formal hearings were conducted on the proposal the Association reserved the right to present further views and material No hearings were held on the bill prior to the adjournment of Congress and that bill died with the closing of the 88d session

THE MEDICAL OFFICER WRITES

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Reviews of Recent Books

ATLAS OF MEN by William H Sheldon Ph D M D with the collaboration of C Wesley Dupertuis Ph D and Eugene McDermott, M A 357 pages illustrated Harper & Bros Publishers New York N Y 1954 Price \$10

This latest volume of the author's "Human Constitution" series presents in a richly illustrated compendium the results of the application of somatotyping technics and classifications to a sample of 46 000 men. The book contains almost 1 200 photographs extensively indexed and placed in calibrated continuum of persons representing different somatotypes. The photographs literally give flesh to the author's famous tridigit code. The presentation afforded by the photographs is augmented by tables showing the height age and weight distributions of the somatotypes illustrated. Because the book is an atlas the textual material is comparatively limited but the general aims of somatotyping and some of its technics are dealt with briefly

The author states that the principal purpose of the Atlas is not to discuss questions concerning the theoretic soundness of somatotyping but rather to provide a file of somatotype variations. Certainly he achieves this purpose But he does allow himself the luxury of in sinuating that as he has so long maintained personality reflects the somatotype the discussion of each major grouping of his subjects is introduced by a thumbnail description of their body build and general behavior patterns and analogies between each type and an appropriate animal. He does not further engage in the controversy over the relationship between body build and personality but does provide objective measurements reproducible from investigator to investigator which can serve as elements of communication between those who have a lined themselves for and against the idea that personality and body build are related.

The work will be useful to all those requiring information about the American male population as to the distribution of each combination of physical measurements Clothing manufacturers quartermasters in the armed services tank and aircraft cockpit designers and similar persons need this information Dr Sheldon suggests further that medical clinicians incorporate somatotyping into their routine description of patients. He expects such incorporation and correlation to reveal a telationship between certain of the constitutional diseases and body type. Thus disease could be predicted in still healthy individuals and appropriate steps taken.

In a y se Dr Sheld n has brught the est mation of body build from Kr eplinian ubjectivity to a high order of objectivity Indiv duals inv stig tin, psychi tric and organic illness and thos study no vari ations in normal psychology and phy ology will find i this work a tool to broaden the scop of their in estig tions and perhap one day to combine and integrate their several efforts

-WILLIAM F SHEELEY LE Col USAF (MC)

STUDIES IN SCHIZOPHRENIA A Mult d pl ry Appoach o M d B R l t hp by th T l ne D p int I f P y b try nd N l gy R p r d by R b r d G H stb Ch urm 619 pg 11l r r d P b l h d f Th C mm w lh Fund by th H vad U ty P C mb dge Ma 1954 P 3850

This unique vol m deta l co ordinated tudy of the pr bl m of chizophre a by a team of psych at 1sts n urolog ts phy 1 logists b och mists clinical psychol gists a d neuro urgeons

I section I hyp the sare dv need which cinceive f the brain as have g f celetory and inhibit y circuit thit povide dynamic inter tion betw a higher and lower I vels f ntegrati a corr ponding to various I vels of the n maxis Schizophrenic pat ent are con ide ed t h v phys logi imp itment in the fa ilitory ci uit whi h is sa d b located th septal gion of th ba This falty facil tory crout p umed t xit ince e ly childhod in h zophr ni per ons te feres with mitional and intellectual growth indire ult i their m rked vuln bilty t the te ses of everyd y l fe

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tion III Tw nty pati nts with Human stud es reported were us d three other pat nt with term nal c cer ad tub ul is served cont ol Elect od we implited in vi ous port n f th br in manly by th open method a f w by a closed stere tact c t chn c Subc rti al electroencephalographi reco dings inv i bly disclo d abnormal pik activity from the septal reg n p tients with the z phr nia which was not obtail diff musual scalp le ds El t timulat on f th ptal gion produced alertne similar to that which occurred in animals and by h mic land hema tolog c chang esembling thos ev ked by adrenocort c troph c horm ne Psychiatric and pycholigical birvitins fill wigitm

latio ndie ted immed ate mproveme t n emot onal responsiven s b ut on half f the pat nt w th schizophren a varying deg es of improveme tw mai tained

Section IV gives detailed summaries of each case Section V contains discussions of the project by a distinguished group of clinical and research experts Perhaps the most penetrating critique (Nettler) points our that technical inaccuracies in electrode placements imperfect knowledge of the specific septal pathophysiology and zeal in the psychiatric efforts following stimulation make doubtful any conclusions reached by the research group

While the specific technics limited controls and methods employed may be faulty this reviewer considers the Tulane project as a mile stone in the investigation of schizophrenia primarily because the approach used endeavors to obtain objective data rather than indulge in theoretic speculations such as abound in current literature. This fascinating study is therefore highly recommended to all practitioners and students of psychiatry. It may well herald a new and profitable avenue to the understanding of schizophrenia and mind brain function.

-ALBERT J GLASS COL MC USA

FUNDAMENTALS OF ANESTHESIA Prepared under the Editorial Direction of the Consultant Committee for Revision of Fundamentals of Anesthesia a publication of the Council on Pha macy and Chemistry American M d call Assoc at on. 3d edition 279 pages illustrated W B Saunders Co Philad lphi Pa 1954 Price \$6

This volume like previous editions is a concise clear outline of the principles of anesthesia prepared by outstanding authorities. They present the basic principles of anesthesia in regard to physiology pharmacology chemistry and physics the technical aspects of in ducing surgical anesthesia and the application of these principles to the management of patients suffering from injuries illness oper ations of the effects of depressant drugs.

The chapters on the physiology chemistry and physics of anes thesia and hypnotic drugs are unusually lucid and thorough. There are also excellently written chapters on pre and post operative care on general and regional anesthesia and on special applications of anesthesia including obstetric pediatric and geriatric problems. Complications and safety measures are also discussed

There are numerous charts and pictures which simplify the text Throughout the book the authors have made use of simple self-explan atory diagrams to illustrate basic principles of physiology and the technics of administering anesthesia are outlined and illustrated step by step. There is a minimum of verbiage all that is written is straight forward and to the point.

This book should prove most valuable to the beginner in anesthes; ology and to the practicing physician who seeks to familiarize himself with this broad field

DIENCEPHALON A om d Ext pyram d 1 F ton by W It Rud II H M D 79 pag N Y 1954 P \$4 II tr t d Gru & Stratt In N w V k

This mo ogriph designed to analyze the central regulation of the function of the aut mic org ns and the subc rtic I organization of motor function ough lly ppeared in German Many will appr ci te the readable summar zat on of this clisical work

In the first part the author describ the riginal method of localized stimulat on by defined el ctric I stimuli admin stered through precise ly pl ced set of f el ctrod n the d ncephalon from which the r sponses of the unrestra ned animal are recorded cinem toor phic lly A circum cribed d tuction f th area ar und a single electrode accomplish d by diath my can b de tified histologically by a stand ard technic Correl tion of the information from the original placement of the electrod the timula mol ved the cinem tographic record f th ubj ct nd th histologic demonstration of the timulated area permits analyses and conclus ons regarding spatial organization of funct o n the dencephalon die cephalic mot r in nervation and the ol of the fre tall be a auto omic effects I the second part of the bo k thi d cu n of the integration of a tonom c functions synthesizes them with classical by iol gip ciples such as B rna d m l u inte eu nd a law st ted by the uthor namely the response of the ogn is dictated by is functi nal equirem nt

The b k swell written with m ny figur a d photogr ph It will be a valuable to the europhy olog t and neur pathologist and shuld f nd a pl ce in the lib ty of any ne interested in general physic logy There is an excell nt bibl graphy of 139 refe e ces which is par ticularly valuable de to the inclusion of many of the basic European in estigat as a thi feld

-CHARLES H STEINMETZ, For LL USAF (MSG)

As st ted n th pr f ce the purp s f this volume is not to en c mpa the entire f ld of 1 surgery but to ser e as a re dy refer ence for the d ntal tud t and the dental practitioner It is di id d nto 35 chapte s the first seen of which or sent an e cellent review of the general tes and basic sci ces relited to or I surgery and are exceedingly well written and compiled. Foll wing a detailed p ent ton on p tent examt tion and dig sis a d the technic of procuri g an adequate hist ry wh in a correlation and co-operation with the physic n i urged thor ughly comprehensive re me of pre and post operat ve m dic tion is given P rtic larly valuable s the section on chemoth peutic d a tib otic agents. The d t on

these drugs has been brought up to date and should prove invaluable to those interested in the most recent findings relevant to the chemo therapeutic and antibiotic agents

Of special interest to the general dental practitioner is the section of this book which is devoted to periapical and periodontal diseases the removal of teeth and the preparation of oral tissues for restorations. Although for the most part the illustrations are excellent many of the flap illustrations for minor oral sugical and dental procedures reveal inadequate flap extensions in relation to the operative area. The chapters on fractures diseases and malformations of the maxillary bones and deformities of the jaws adequately present the subject material. The remainder of the volume is divided into sections on the maxillary sinuses the temporomandibular joint and its derangements diseases of the salivary glands the lips tongue blood and hemorrhage emergency measures cleft lip and palate oral tumors and dietary or nutritional measures.

The format of this book is excellent. The index is well compiled and the extensive bibliographies following each pertinent section provide detailed information on the subject matter. This volume is not sufficiently detailed to be of great value to the dental and the oral surgical specialist. As a reference and a source of information for the dental student and the general dental practitioner, however, it definitely deserves, recommendation.

-ALEX M MOHNAC Lt Col USAF (DC)

CEREBROVASCULAR DISEASE by James Pete Mu phy M D 408 pages illustrated The Yea Book Publishers Inc Chicago III 1954 Price \$12

This volume should be a welcome addition to any doctor's library as it will serve to better acquaint him with the vascular diseases of the brain All phases of diagnosis and treatment are adequately cover ed and there are several very helpful charts and an ample and up to-date bibliography. The photographs and the type are good and the style is readable.

The author takes a definite stand on some controversial questions. He gives tacis approval to arteriographic demonstration of thromboses a clinical problem which frequently creates quite a dilemma. He also warns about the possible dangers of anticoagulant therapy. This should impress those who wish to use these drugs when the diagnosis is uncertain. The reviewer saw no reference to the results of the use of intravenous procaine solution as contrasted with stellate procaine blocks.

The author is to be congratulated and Lagree with Dr Percival Bailey who states in the foreword that it is a scholarly and useful book and will have a well merited success

-RICHARD W GARRITY Capt (MC) USV

ATTITUDES IN PSYCHIATRIC NURSING CARE by M d l Olg W
R N B S M L 111 pag G P P nam S N w Y k
N Y 1954 P 22

Thi mall volume will wny ur heart To begi with it is a friendly book its size paper cover and large print say to you. You can pick me up any pr time. Y d not have to set as de several days to do it justice. Furthermore whil you are reding it you feel you re jst sitting talking to Mss Weiss. Numerous actual eximples of whith she was describing cm t my mind while reading and I felt like syig. Yes that sy yiu.

The book we ceee data time who in our urses meeting we were empha z ng wok i g we th patients Our less experienced murs so he dasked how to be more eff twei pat nt care and we held replied by desc b ng ctual peens so four filure and success with different ptt thow delight dliwas to receive a book on titt destath time und fad nt my of the ting swe had been talking bour The thime i will dliped and thoogh The discussion of attitudes pessas well strapplication of the ettit des niellation to the pittent become mit mingful thin when the ted as a single entity.

Miss W : bo k will be n our recommended reading list redig it is a lening experience f th new muse in psychittic nurial and m as of crytilz githe thinking of the experienced nurse in this field Add three che is frithelist chapter. The Nurse is Indiadual I was so much: genent the fierred git I took the firmoon off cin II diaconfe ce broke a hird erappoint ment indiventity the String.

-I INA STEARNS LL (NC) USN

SEVENTY FIVE YEARS OF MEDICAL PROGRESS 1878 1953 (F W H m ph C af f th W ld Md 1 Å t) dtd d wth f word by L H Bue M D F A C P 286 pg L & F hee Ph lad lph Pa 1954 P 24

This lume is mpil tion of p pers on the h story d present st tus of med eine in 19 medic 1 pec altres and one paper on general precise. The title of the volume was the thime of the 1953 First West ern Hem spher Conference of Th. Wold Medic 1 Association and each of the papers w contribution to that Conference by a dit is us shed whose two medicine.

Although bok of the size obviously cannot describe e ery gre tadvance medic I seence dur g the per od co ered it nevertheless doe report on some of the most ign fic t discoveries through the past 75 year. U like may other sim lar treatments most of the thor honestly mak an effort t port y ng the historical dev lopments it the field of the ir interest and the e developments are placed in the poper relate niship or per pectice to other fields of medicine.

The chapter by Dr. Ulrich R. Bryner on general practice is particular ly good In addition to reviewing the factors that altered the nature of general practice from the days of our grandfathers Dr Bryner quotes some interesting statistics. Although in the United States there are more physicians in practice today than ever before there are fewer full time general practitioners than there were in 1940 or 1880. In the decade of 1940 to 1950 the number of general practitioners decreased by 13 percent and the number of specialists increased by 63 percent

If one desires more than a cursory discussion of the significant discoveries in medicine during the past 75 years he will not be able to find it in this book. This volume will be however a small but hand; adjunct to a reference library

-CHARLES L. LEEDHAM Col MC USA

THE PHYSICAL ENVIRONMENT OF THE FLYER by Dr Heinz Habe 179 pages illustrated Air University USAF School of Aviation Medicine Randolph Field Tex 1954

This is a handbook on the physics of the atmosphere and its relation to flight which will be of interest to all who are engaged in aviation medical research A valuable condensation of much scientific material the discussion begins with the gaseous state of matter and proceeds in a logical manner to a consideration of the mechanical and thermal aspects of high speed flights. The atmospheric jet stream phenomenon capable of boosting airborne speeds by 100 miles an hour and the problems of bailout at very high altitudes are two of the many major fields of current investigation that the author presents authoritatively

In reviewing the aeropause a concept he helped evolve Dr Haber says that the technical means available in aviation today make it necessary to investigate the technical and human problems peculiar to flight in the border area between the terrestrial atmosphere and At an altitude of 120 miles the aerodynamic forces of lift and drag vanish completely This level can be considered the mechan ical borders of space for all practical purposes Though compelling teading the volume is directed primarily to the serious scientist who requires a ready summary of current accepted facts in this field. There are a generous number of figures and tables from published works an adequate index and a total of 162 references to the literature

-ROBERT I BENFORD Col USAF (MC)

CLINICAL INTERPRETATION OF LABORATORY TESTS by Raymond H
Goodale M D 3d dit on 720 page 105 illustration 6 in color
F A Davi Co Philadelphia Pa 1954 Pice \$6 50

This book is an attempt by the author to correlate the laboratory findings in health and disease to the special systems of the body In part one there is a brief discussion of the physiology and normal vari ations of the various body fluids and excreta This section also in cludes chapters which would be of interest to laboratory technicians

medi al student and others ngaged in the b ic sciences r lative to n under t nd ng of the und rlying d sease pt se associated with the v iou I bo atory p or dures Subject included here re the ba al m tabol c r t b f outline of l ver function te ts and vi us mycot and b cteri log c examinat s s they p rtain to di g sin an fic circumst ces

I part two dise s lendi g them ly s to l boratory e amination pre nted with a bif expl nat on of ch Th ommon oc ated I bo tory f ding which re by t dit o expect d to be fo d n these dise stit are ment in diand; me insticis discuid

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-WILLIAM L. CHAPMAN LE (MC) USY

APHASIA THERAPEUTICS by Mry C t L g b Ph D d J
Bod ax Ph D 185 p g Th M m ll C N w Y k N Y 1954 P \$3.75

form the t change f the app a aladett ig f patet with apha Comm nd ble atte tio g n t th s e ment of e dual cap ctes int t pe ality trat nd psychol gic facto a d f thir nflue on thir triing poce

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t led f the type f book A mplifid cle fit n with ome in of a tom fee wuldpbblyh s rved as well to ntrod c th t on pp 1 loffun to ldfcts ndrsidual can citi whih mily form the bssfrretang ffrt Mot physicins p obably will ds gee with the nel sio of hyste a nithe discus in While the uth may not have inte ded t the impr s ion s gi en that thy reg d the tre tm t of hy ter with the use of hypn s with the sphe of repoblity of the phis thir pit Byod occ i al supefcal sympt m tic milarity n hy t ri to los f functo eult g f om br njury three doe n t pp r to b y just f c tion fo thi nnecti

In g fl ths a mform to book which shuld b of vle to physican and others nirsted kowing in ab t traing tch n phasia gnosi and p x a

NONTUBERCULOUS DISEASES OF THE CHEST edited by Andrew I Banyai M D 1 152 pages 260 illustrations Charles C Thomas Publisher Springfield III 1954 Price \$18 75

This volume is a collective and co-operative project by 37 contributors from the United States Argentine England India and Mexico It includes chapters on the physiology and pathologic physiology of respiration the bacterial viral parasitic and mycotic diseases of the chest tumors of the lung and mediastinum industrial diseases congenital anormalies and diseases of vascular origin. Most of the chipters present a comprehensive coverage of the subject with excellent bibliographies attached. Many of the references by foreign authors are to foreign literature and are not always readily available in this country. References to some recent authoritative reports published in this country have been omitted. The inclusion of atticles by outstanding authorities from other countries, however, broadens the scope of the coverage of material.

The specific treatment of some infectious diseases particularly with reference to antibiotic therapy is already somewhat out of date however the general fundamentals of treatment are well covered

This is an excellent book and I believe the most comprehen ive and complete volume on the subject of nontuberculous diseases of the chest It should be in all medical libraries and will prove to be an excellent reference for all interested in these conditions

-JAMES A. WIFR, II COI MC USA

PRACTICAL FULL DENTURE PROSTHESIS by Joseph Simeon Landa
D D S 2d edition 501 pages 218 illustrations Dennal Items of In
terest Publishing Co Inc Brooklyn N Y 1954 Price \$9.50

This text is a practical guide for the dental practitioner in the treatment of the edentulous patient and should be an invaluable addition to the library of the general practitioner or postgraduite attilent it contains many practical suggestions based on sound principles. The chapters are arranged in logical sequence with the exception of those on tooth arrangement occlusion and articulation.

The chapter on anatomic and physiologic considerations points aux many areas which warrant special attention in complete nitificial denotine construction however the explanation based on the anatomy of some of these areas is not coincident with a more detailed attaly of the subject The discussion of denture base miterrila will not be enlightening to those seeking information on the methyl methiciplate and chrome cobalt alloys. The discussion of the free way apace is informative but the method of measurement employing the author a device, is debatable in Phonetics in Complete Denture Prottheals the anaty describes the use of phonetics as an aid to proper innerior tooth at rangement and to the establishment of correct vertical dimension. The description of the tongue position in pronouncing the various considerations.

nants is questionable however. The chipters by Schuyler and N gle are excellent additions to the text

The book is written in an uncomplicated easy flowing style and the numb r of illustratic photographs and di grams is adequate. This the a thor mode a thorough review of the literature in the field is evidenced by the extensive bibliography. The index too is very complete bit both bibliography and index should have been listed in the table of corrects unfit their own headings.

-LESLIE R ALLEN LL Col USAF (MC)

THE ROENTGENOLOGIST IN COURT by S m l W ght D nald M D 2d dtu 358 pg Ch l C Th ma P blu h Sp gf ld III 1954 p 1775

This re d ble informative and i teresting volume is conceined with the relat inship betw in radiologic practice d the law a subject of the gre test import ce to phy icians in this specialty. As the author points ut in yield logit (as will as my thir physician) is likely ome day to appe in a courtroom either a defend not or as a wit ne s in a milpractic ut This book is intended to help prepare him for the time when he may be served with a subpoent and even more important to educate him in the field of milpractice previnto.

There an ever 1 c easing thousness of the hazards to physical in of the malprictice at During 1952 in earlier wery 38 physical in the Unit d Stats was a uniform placetic for total of 4 000 suits—a tenfold 1 crease since 1929. Furthermore the verage amount of the judgments against physical is β at β succeed β a result malpractice in unance: β coming modifficult to obtain

Rad ologic prictice in the vanguard of medical spicialities plagued by the legal hazard of magnetic election. The author believes that much can indimust be done to impose this altimagaituation. The exists great opportunity to improve the perional and public relation of physicians, and the whor specifies what me sures can be effectively used.

The chapt r head ngs indicate the scope of the wok Rel tionship between Physici n and Patient Malpr ctice. The Phy ic an and the Law of Agen y M lp act ce Defen and Prophylaxis Ev de ce and Testim ny Priv leged Communic tions. E pert Testimo y Expert Witness F s V Ray Films a Fridence Onership of Films Physical Review of the Property of the Physical Review of the Private Review of the Physical Review of the Private Review of the Physical Review of the Private Review of the Physical Review of the Private Review of the Priva

c an and C ntr ct X r y and Dent try The text cont ns c tations total g 400 c es Th se cases t bul ted both alpha betically and g gr phically by states for ady refer nc There s a bibl og phy nd a good ndex

The book s tract: lypinted dis pla retored thinks to the author selection of mit all nd to hexcellent style of p sentation hor radiologists who stirst the book will fall to finish t certainly every radiologist shiuld red it —CARRE BENTEL Gopt (MG) USN

New Books Received

Books received by the U.S. Armed Forces Medical Journal are acknowledged in this department Those of greatest interest will be selected for review in a later issue

- COLOR ATLAS OF PATHOLOGY Volume 2 Endocrine System Including Pituiary Thyroid Parathyroid Adrenals and Pancreas Gynecology and Obstetrics Including Reproductive Organs Breasts Male Genutal Tract Skin. Prepared under the auspices of the U S Naval Medical School of the National Naval Medical Center Bethesda Md 450 pages illustrat d with 1 032 figures in color on 343 plates J B Lippincott Co Philadelphia Pa 1954 Price \$20
- THE NEUROANATONICAL BASIS FOR CLINICAL NEUROLOGY by Talmage
 L. Pe le M D Associate Professor of Anatomy in Charge of Neuromicromy Assistant Prof ssor of Medicine Duke University School of
 Medicine 564 pages illustrated McGraw Hill Book Co Inc New
 York, N Y 1954 Price \$125
- BLOOD GROUPS IN MAN by R. R. Race Ph. D. (Cambridge) M. R. C. S. (England) F. R. S. Durector Medical Research Council Blood Group Research Unit. The Lister Institute London, and R. 16 Sange. Ph. D. (London) B. Sc. (Sydney) Medical Research Council Blood Group Research Unit. The Lister Institute London with a Foreword by Professor Si. Ronald F. she. F. R. S. 2d edition 400 pages illustrated Charles C. Thomas Publisher Springfield III. 1954 Price \$7.50
- THE DISTRIBUTION OF THE HUMAN BLOOD GROUPS by A E Mourant
 M A D Phil D M (Oxoo) Director Medical Re earch Council
 Blood Group Reference Laboratory The Lister Institute of Preventive
 M dictine London Honorsty Member of Staff The Lister Institute
 Honoraty Adviser Nuffield Blood Group Centre Sometime Visiting
 Professor of Serology Columbia University in the City of New York
 With a Foreword by Professor H J Flue F R S 438 pages illus
 trated Charles C Thomas Publisher Springfield III 1954 Price
 38 75
- RETROPUBIC PROSTATECTOMY For Beniga Enlargement of the Pro tate Gland by Fancis A Ben enit M D F A C S Attending Urologist Cowald Swinney Low ley Foundation St Clare 8 Hospital A Attending Urologist Clare 1 Urologist Lincola Hospital A sociate Attending Urologist New York Polyclinic Ho pital and Medical School As istant Attending Urologist James Buchan B Brady Foundation of the New York Hospital New York N Y Art direction and 44 original drawings by William P D: dwscb 227 pages Charles C Thomas Publishe Springfeld III 1954 Price \$11
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